Reading Section

Read this chapter to learn

- The 10 types of TOEFL® test Reading questions
- ▶ How to recognize each Reading question type
- Tips for answering each Reading question type
- Strategies for preparing for the Reading section

he *TOEFL iBT*[®] test Reading section includes three or four reading passages, each approximately 700 words long. There are multiple questions per passage. You have from 54 to 72 minutes to answer all questions in the section. In the Reading section, you may skip questions and come back to them later, as long as you answer all the questions before time is up.

Reading Passages

TOEFL iBT[®] Reading passages are excerpts from college-level textbooks and published articles that would be used in introductions to a discipline or topic. The excerpts are changed as little as possible because the goal of the test is to assess how well test takers can read the kind of writing that is used in an academic environment.

The passages cover a variety of subjects. Do not worry if you are unfamiliar with the topic of a passage. All the information needed to answer the questions is in the passage. All $TOEFL^{\otimes}$ reading passages are classified into three basic categories based on author purpose: (1) Exposition, (2) Argumentation, and (3) Historical.

Often, passages will present information about the topic from more than one perspective or point of view. This is something you should note as you read because usually you will be asked at least one question that allows you to show that you have understood the general organization of the passage. Common types of organization you should be able to recognize are:

- classification
- comparison/contrast
- cause/effect
- problem/solution

TOEFL reading passages are approximately 700 words long, but the passages used may vary somewhat in length. Some passages may be slightly longer than 700 words, and some may be slightly shorter.

Reading Questions

Reading questions cover Basic Information skills, Inferencing skills, and Reading to Learn skills. There are ten question types. The following chart summarizes the categories and types of $TOEFL\ iBT^{\circledR}$ Reading questions.

TOEFL® Reading Question Types

Basic Information and Inferencing questions

- 1. Factual Information guestions (2 to 5 guestions per set)
- 2. Negative Factual Information questions (0 to 2 questions per set)
- 3. Inference questions (1 to 2 questions per set)
- 4. Rhetorical Purpose questions (1 to 2 questions per set)
- 5. Vocabulary questions (1 to 2 questions per set)
- 6. Reference questions (0 to 2 questions per set)
- 7. Sentence Simplification question (0 or 1 question per set)
- 8. Insert Text question (1 question per set)

Reading to Learn questions (1 per set)

- 9. Prose Summary
- 10. Fill in a Table

The following sections will explain each of these question types. You will find out how to recognize each type and see examples of each type with explanations. You will also find tips that can help you answer each Reading question type.

Basic Information and Inferencing Questions

Type 1: Factual Information Questions

These questions ask you to identify factual information that is explicitly stated in the passage. Factual Information questions can focus on facts, details, definitions, or other information presented by the author. They ask you to identify specific information that is typically mentioned only in part of the passage. They generally do not ask about general themes that the passage as a whole discusses. Often, the relevant information is in one or two sentences.

How to Recognize Factual Information Questions

Factual Information questions are often phrased in one of these ways:

- According to the paragraph, which of the following is true of X?
- The author's description of X mentions which of the following?
- According to the paragraph, X occurred because . . .
- According to the paragraph, X did Y because . . .
- According to the paragraph, why did X do Y?
- The author's description of X mentions which of the following?

Tips for Factual Information Questions

- You may need to refer back to the passage in order to know what exactly is said about the subject of the question. Since the question may be about a detail, you may not recall the detail from your first reading of the passage.
- Eliminate choices that present information that is contradicted in the passage.
- Do not select an answer just because it is mentioned in the passage. Your choice should answer the specific question that was asked.

Example

PASSAGE EXCERPT: "... Sculptures must, for example, be stable, which requires an understanding of the properties of mass, weight distribution, and stress. Paintings must have rigid stretchers so that the canvas will be taut, and the paint must not deteriorate, crack, or discolor. These are problems that must be overcome by the artist because they tend to intrude upon his or her conception of the work. For example, in the early Italian Renaissance, bronze statues of horses with a raised foreleg usually had a cannonball under that hoof. This was done because the cannonball was needed to support the weight of the leg. In other words, the demands of the laws of physics, not the sculptor's aesthetic intentions, placed the ball there. That this device was a necessary structural compromise is clear from the fact that the cannonball quickly disappeared when sculptors learned how to strengthen the internal structure of a statue with iron braces (iron being much stronger than bronze) ..."

According to paragraph 2, sculptors in the Italian Renaissance stopped using cannonballs in bronze statues of horses because

- (A) they began using a material that made the statues weigh less
- (B) they found a way to strengthen the statues internally
- (C) the aesthetic tastes of the public had changed over time
- (D) the cannonballs added too much weight to the statues

Explanation

The question tells you to look for the answer in the excerpted paragraph, which in this case is paragraph 2. You do not need to skim the entire passage to find the relevant information.

Choice A says that sculptors stopped putting cannonballs under the raised legs of horses in statues because they learned how to make the statue weigh less and not require support for the leg. The passage does not mention making the statues weigh less; it says that sculptors learned a better way to support the weight. Choice C says that the change occurred only because people's taste changed, meaning that the cannonballs were never structurally necessary. That directly contradicts the passage. Choice D says that cannonballs added weight to the statues. This contradicts the passage, which says that the cannonball was needed to support the weight of the leg of the statue. Choice B correctly identifies the reason the passage gives for the change: sculptors developed a way to strengthen the statue from the inside, making the cannonballs physically unnecessary.

Type 2: Negative Factual Information Questions

These questions ask you to verify what information is true and what information is NOT true or not included in the passage based on information that is explicitly stated in the passage. To answer this kind of question, first locate the relevant information in the passage. Then verify that three of the four answer choices are true and that the remaining choice is false. Remember, for this type of question, the correct answer is the one that is NOT true.

How to Recognize Negative Factual Information Questions

You can recognize negative fact questions because the word "NOT" or "EXCEPT" appears in the question in capital letters.

- According to the passage, which of the following is NOT true of X?
- The author's description of X mentions all of the following EXCEPT . . .

Tips for Negative Factual Information Questions

- Usually a Negative Factual Information question requires you to check more of the passage than a Factual Information question. The three choices that are mentioned in the passage may be spread across a paragraph or several paragraphs.
- In Negative Factual Information questions, the correct answer either directly contradicts one or more statements in the passage or is not mentioned in the passage at all.
- After you finish a Negative Factual Information question, check your answer to make sure you have accurately understood the task.

Example

PASSAGE EXCERPT: "The United States in the 1800s was full of practical, hardworking people who did not consider the arts—from theater to painting—useful occupations. In addition, the public's attitude that European art was better than American art both discouraged and infuriated American artists. In the early 1900s there was a strong feeling among artists that the United States was long overdue in developing art that did not reproduce European traditions. Everybody agreed that the heart and soul of the new country should be reflected in its art. But opinions differed about what this art would be like and how it would develop."

According to paragraph 1, all of the following were true of American art in the late 1800s and early 1900s EXCEPT:

- (A) Most Americans thought art was unimportant.
- (B) American art generally copied European styles and traditions.
- Most Americans considered American art inferior to European art.
- American art was very popular with European audiences.

Explanation

Sometimes in Negative Factual Information questions, it is necessary to check the entire passage in order to make sure that your choice is not mentioned. However, in this example, the question is limited to one paragraph, so your answer should be based just on the information in that paragraph. Choice A is a restatement of the first sentence in the paragraph: since most Americans did not think that the arts were useful occupations, they considered them unimportant. Choice B makes the same point as the third sentence: ". . . the United States was long overdue in developing art that did not reproduce European traditions," which means that up to this point in history, American art did reproduce European traditions. Choice C is a restatement of the second sentence in the paragraph: American artists were frustrated because of "the public's attitude that European art was better than American art. . . ." Choice D is not mentioned anywhere in the paragraph. Because you are asked to identify the choice that is NOT mentioned in the passage or that contradicts the passage, the correct answer is choice D.

Type 3: Inference Questions

These questions measure your ability to comprehend an argument or an idea that is strongly implied but not explicitly stated in the text. For example, if an effect is cited in the passage, an Inference question might ask about its cause. If a comparison is made, an Inference question might ask for the basis of the comparison. You should think about not only the explicit meaning of the author's words but also the logical implications of those words.

How to Recognize Inference Questions

Inference questions will usually include the word *infer, suggest,* or *imply*.

- Which of the following can be inferred about X?
- The author of the passage implies that X . . .
- Which of the following can be inferred from paragraph 1 about X?

Tips for Inference Questions

- Make sure your answer does not contradict the main idea of the passage.
- Do not choose an answer just because it seems important or true. The correct answer must be inferable from the passage.
- You should be able to defend your choice by pointing to explicitly stated information in the passage that leads to the inference you have selected.

Example

PASSAGE EXCERPT: "... The nineteenth century brought with it a burst of new discoveries and inventions that revolutionized the candle industry and made lighting available to all. In the early-to-mid-nineteenth century, a process was developed to refine tallow (fat from animals) with alkali and sulfuric acid. The result was a product called stearin. Stearin is harder and burns longer than unrefined tallow. This breakthrough meant that it was possible to make tallow candles that would not produce the usual smoke and rancid odor. Stearins were also derived from palm oils, so vegetable waxes as well as animal fats could be used to make candles ... "

Which of the following can be inferred from paragraph 1 about candles before the nine-teenth century?

- (A) They did not smoke when they were burned.
- (B) They produced a pleasant odor as they burned.
- (C) They were not available to all.
- (D) They contained sulfuric acid.

Explanation

In the first sentence from the excerpt, the author says that "new discoveries and inventions" made "lighting available to all." Candles are only kind of lighting discussed in the passage. If the new discoveries were important because they made candles available to all, we can infer that before the discoveries, candles were not available to everyone. Therefore choice C is an inference about candles we can make from the passage. Choices A and B can be eliminated because they explicitly contradict the passage ("the usual smoke" and "rancid odor"). Choice D can be eliminated because sulfuric acid was first used to make stearin in the nineteenth century, not before the nineteenth century.

Type 4: Rhetorical Purpose Questions

Rhetoric is the art of speaking or writing effectively. In Factual Information questions, you are asked *what* information an author has presented. In Rhetorical Purpose questions, you are asked *why* the author has presented a particular piece of information in a particular place or manner. Rhetorical Purpose questions ask you to show that you understand the rhetorical function of a statement or paragraph as it relates to the rest of the passage.

Sometimes you will be asked to identify how one paragraph relates to another. For instance, the second paragraph may give examples to support a statement in the first paragraph. The answer choices may be expressed in general terms (for example, "a theory is explained and then illustrated") or in terms that are specific to the passage. ("The author explains the categories of adaptation to deserts by mammals and then gives an example.")

A Rhetorical Purpose question may also ask why the author quotes a certain person or why the author mentions a particular piece of information (*Example:* Why does the author mention "the ability to grasp a pencil"? *Correct answer:* It is an example of a motor skill developed by children at 10 to 11 months of age.)

How to Recognize Rhetorical Purpose Questions

These are examples of the way Rhetorical Purpose questions are typically worded:

- The author discusses X in paragraph 2 in order to . . .
- Why does the author mention X?
- Why does the author compare X to Y?

Tips for Rhetorical Purpose Questions

- Know the definitions of these words or phrases, which are often used to describe different kinds of rhetorical purposes: "to illustrate," "to explain," "to contrast," "to refute," "to note," "to criticize."
- Rhetorical Purpose questions usually do not ask about the overall organization of the reading passage. Instead, they typically focus on the logical links between sentences and paragraphs.

Example

PASSAGE EXCERPT: "... Sensitivity to physical laws is thus an important consideration for the maker of applied-art objects. It is often taken for granted that this is also true for the maker of fine-art objects. This assumption misses a significant difference between the two disciplines. Fine-art objects are not constrained by the laws of physics in the same way that applied-art objects are. Because their primary purpose is not functional, they are only limited in terms of the materials used to make them. Sculptures must, for example, be stable, which requires an understanding of the properties of mass, weight distribution, and stress. Paintings must have rigid stretchers so that the canvas will be taut, and the paint must not deteriorate, crack, or discolor. These are problems that must be overcome by the artist because they tend to intrude upon his or her conception of the work. For example, in the early Italian Renaissance, bronze statues of horses with a raised foreleg usually had a cannonball under that hoof. This was done because the cannonball was needed to support the weight of the leg ..."

Why does the author discuss the "bronze statues of horses" created by artists in the early Italian Renaissance?

- (A) To provide an example of a problem related to the laws of physics that a fine artist must overcome
- (B) To argue that fine artists are unconcerned with the laws of physics
- © To contrast the relative sophistication of modern artists in solving problems related to the laws of physics
- ① To note an exceptional piece of art constructed without the aid of technology

Explanation

You should note that the sentence that first mentions "bronze statues of horses" begins "For example . . ." The author is giving an example of something that was introduced earlier in the paragraph. The paragraph overall contrasts how the constraints of physical laws affect the fine arts differently from applied arts or crafts. The fine artist is not concerned with making an object that is useful, so he or she is less constrained than the applied artist. However, because even a fine-arts object is made of some material, the artist must take into account the physical properties of the material. In the passage, the author uses the example of the bronze statues of horses to discuss how artists had to include some support for the raised foreleg of the horse because of the physical properties of the bronze. So the correct answer is choice A.

Type 5: Vocabulary Questions

These questions ask you to identify the meanings of individual words and phrases as they are used in the reading passage (a word might have more than one meaning, but *in the reading passage*, only one of those meanings is relevant). Vocabulary that is tested actually occurs in the passage; there is no "list of words" that must be tested. Usually a word or phrase is chosen to be tested as a vocabulary question because understanding that word or phrase is important to understanding a large or important part of the passage. On the *TOEFL*® test, some words in the passage may be unusual or technical or have special meanings in the context of the topic; they are defined for you. If you click on the hyperlinked word in the

passage, a definition will appear in a box. In this book, words of this type are defined at the end of the passage. Naturally, words that are tested as vocabulary questions are not defined for you.

How to Recognize Vocabulary Questions

Vocabulary questions are usually easy to identify. You will see one word or phrase highlighted in the passage. You are then asked a question like any of the following:

- The word "X" in the passage is closest in meaning to . . .
- The phrase "X" in the passage is closest in meaning to . . .
- In stating X, the author means that . . .

Tips for Vocabulary Questions

- Remember that the question is not just asking the meaning of a word; it is asking for the meaning *as it is used in the passage*. Do not choose an answer just because it can be a correct meaning of the word; understand which meaning the author is using in the passage.
- Reread the sentence in the passage, substituting the word or phrase you have chosen. Confirm that the sentence still makes sense in the context of the whole passage.

Examples

PASSAGE EXCERPT: "In the animal world the task of moving about is fulfilled in many ways. For some animals locomotion is accomplished by changes in body shape . . ."

The word "locomotion" in the passage is closest in meaning to

- (A) evolution
- (B) movement
- (C) survival
- ① escape

Explanation

Locomotion means "the ability to move from place to place." In this example, it is a way of restating the phrase "the task of moving" in the preceding sentence. So the correct answer is choice B.

PASSAGE EXCERPT: "Some poisonous snake bites need to be treated immediately or the victim will suffer paralysis . . ."

In stating that the victim will "suffer paralysis" the author means that the victim will

- (A) lose the ability to move
- (B) become unconscious
- © undergo shock
- feel great pain

Explanation

In this example, both the words tested from the passage and the possible answers are phrases. *Paralysis* means "the inability to move," so if the poison from a snake bite causes someone to "suffer paralysis," that person will "lose the ability to move." The correct answer is choice A.

Type 6: Reference Questions

These questions ask you to identify referential relationships between the words in the passage. Often, the relationship is between a pronoun and its antecedent (the word to which the pronoun refers). Sometimes other kinds of grammatical reference are tested (like *which* or *this*).

How to Recognize Reference Questions

Reference questions look similar to vocabulary questions. In the passage, one word or phrase is highlighted. Usually the word is a pronoun. Then you are asked:

• The word "X" in the passage refers to . . .

The four answer choices will be words or phrases from the passage. The high-lighted word or phrase refers to only one of the choices.

Tips for Reference Questions

- If the Reference question is about a pronoun, make sure your answer is the same number (singular or plural) and case (first person, second person, third person) as the highlighted pronoun.
- Substitute your choice for the highlighted word or words in the sentence. Does it violate any grammar rules? Does it make sense?

Examples

PASSAGE EXCERPT: "... These laws are universal in their application, regardless of cultural beliefs, geography, or climate. If pots have no bottoms or have large openings in their sides, they could hardly be considered containers in any traditional sense. Since the laws of physics, not some arbitrary decision, have determined the general form of applied-art objects, they follow basic patterns, so much so that functional forms can vary only within certain limits ... "

The word "they" in the passage refers to

- (A) applied-art objects
- B the laws of physics
- (C) containers
- (D) the sides of pots

Explanation

This is an example of a simple pronoun-referent question. The highlighted word *they* refers to the phrase "applied-art objects," which immediately precedes it, so choice A is the correct answer.

Often, the grammatical referent for a pronoun will be separated from the pronoun. It may be located in a preceding clause or even an earlier sentence.

PASSAGE EXCERPT: "... The first weekly newspaper in the colonies was the *Boston Gazette*, established in 1719, the same year that marked the appearance of Philadelphia's first newspaper, the *American Mercury*, where the young Benjamin Franklin worked. By 1760 Boston had 4 newspapers and 5 other printing establishments; Philadelphia, 2 newspapers and 3 other presses; and New York, 3 newspapers. The distribution, if not the sale, of newspapers was assisted by the establishment of a postal service in 1710, which had a network of some 65 offices by 1770, serving all 13 colonies ..."

The word "which" in the passage refers to

- (A) distribution
- (B) sale
- © newspaper
- D postal service

Explanation

In this example, the highlighted word is a relative pronoun, the grammatical subject of the relative clause "which had a network of some 65 offices . . ." The relative clause is describing the postal service, so choice D is the correct answer.

PASSAGE EXCERPT: "... Roots anchor the plant in one of two ways or sometimes by a combination of the two. The first is by occupying a large volume of shallow soil around the plant's base with a *fibrous root system*, one consisting of many thin, profusely branched roots. Since these kinds of roots grow relatively close to the soil surface, they effectively control soil erosion. Grass roots are especially well suited to this purpose. Fibrous roots capture water as it begins to percolate into the ground and so must draw their mineral supplies from the surface soil before the nutrients are leached to lower levels ..."

The phrase "this purpose" in the passage refers to

- (A) combining two root systems
- **B** feeding the plant
- © preventing soil erosion
- D leaching nutrients

Explanation

In the example, the highlighted words are a phrase containing a demonstrative adjective (*this*) and a noun (*purpose*). Because a fibrous root system can keep soil in place, it can be used to stop erosion, and grass roots are a fibrous root system. The sentence could be reworded as "Grass roots are especially well suited to preventing soil erosion," so choice C is the correct answer.

Type 7: Sentence Simplification Questions

In this type of question you are asked to choose a sentence that has the same essential meaning as a sentence that occurs in the passage. Not every reading set includes a Sentence Simplification question. There is never more than one in a set.

How to Recognize Sentence Simplification Questions

Sentence Simplification questions always look the same. A single sentence in the passage is highlighted. You are then asked:

• Which of the following best expresses the essential information in the highlighted sentence? Incorrect answer choices change the meaning in important ways or leave out essential information.

Tips for Sentence Simplification Questions

- Make sure you understand both ways a choice can be incorrect:
 - It misrepresents information in the highlighted sentence.
 - It leaves out something important from the highlighted sentence.
- Make sure your answer does not contradict the main argument of the paragraph in which the sentence occurs, or the passage as a whole.

Example

PASSAGE EXCERPT: "... Although we now tend to refer to the various crafts according to the materials used to construct them—clay, glass, wood, fiber, and metal—it was once common to think of crafts in terms of function, which led to their being known as the "applied arts." Approaching crafts from the point of view of function, we can divide them into simple categories: containers, shelters, and supports. There is no way around the fact that containers, shelters, and supports must be functional. The applied arts are thus bound by the laws of physics, which pertain to both the materials used in their making and the substances and things to be contained, supported, and sheltered. These laws are universal in their application, regardless of cultural beliefs, geography, or climate. If a pot has no bottom or has large openings in its sides, it could hardly be considered a container in any traditional sense. Since the laws of physics, not some arbitrary decision, have determined the general form of applied-art objects, they follow basic patterns, so much so that functional forms can vary only within certain limits. Buildings without roofs, for example, are unusual because they depart from the norm. However, not all functional objects are exactly alike; that is why we recognize a Shang Dynasty vase as being different from an Inca vase. What varies is not the basic form but the incidental details that do not obstruct the object's primary function ..."

Which of the following best expresses the essential information in the highlighted sentence? Incorrect answer choices change the meaning in important ways or leave out essential information.

- (A) Functional applied-art objects cannot vary much from the basic patterns determined by the laws of physics.
- B The function of applied-art objects is determined by basic patterns in the laws of physics.
- © Since functional applied-art objects vary only within certain limits, arbitrary decisions cannot have determined their general form.
- ① The general form of applied-art objects is limited by some arbitrary decision that is not determined by the laws of physics.

Explanation

It is important to note that the question says that *incorrect* answers change the original meaning of the sentence or leave out essential information. In this example, choice D changes the meaning of the sentence to its opposite; it says that the form of functional objects is arbitrary, when the highlighted sentence says that the forms of functional objects are *never* arbitrary. Choice B also changes the meaning. It says that the functions of applied-art objects are determined by physical laws. The highlighted sentence says that the *form of the object* is determined

by physical laws but the function is determined by people. Choice C leaves out an important idea from the highlighted sentence. Like the highlighted sentence, it says that the form of functional objects is not arbitrary, but it does not say that it is physical laws that determine basic form. Only choice A makes the same point as the highlighted sentence and includes all the essential meaning.

Type 8: Insert Text Questions

In this type of question, you are given a new sentence and are asked where in the passage it would best fit. You need to understand the logic of the passage as well as the grammatical connections (like pronoun references) between sentences. Every set includes an Insert Text question. There is never more than one in a set.

How to Recognize Insert Text Questions

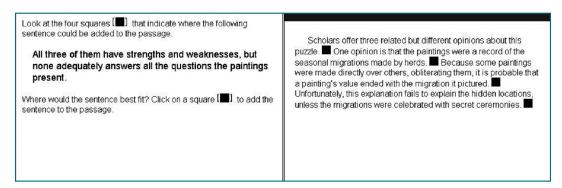
Insert Text questions are easy to identify when taking the *TOEFL iBT*[®] test. In the passage you will see four black squares. The squares are located at the beginnings or ends of sentences. Sometimes all four squares appear in one paragraph. Sometimes they are spread across the end of one paragraph and the beginning of another. You are then asked this question:

Look at the four squares [**■**] that indicate where the following sentence could be added to the passage.

[You will see a sentence in bold.]

Where would the sentence best fit? Click on a square [] to add the sentence to the passage.

Your job is to click on one of the squares and insert the sentence in the text. The following is an example of how this question displays on the TOEFL iBT test.



Tips for Insert Text Questions

- When taking the *TOEFL iBT*[®] test, try the sentence in each of the places indicated by the squares. You can place and replace the sentence as many times as you want.
- Look at the structure of the sentence you are inserting. Pay special attention to connecting words; they can provide important information about where the sentence should be placed.
- Frequently used connecting words:

On the other hand Further, or Furthermore Similarly
For example Therefore In contrast
On the contrary In other words Finally

As a result

• Make sure that the inserted sentence connects logically to both the sentence before it and the sentence after it, and that any pronouns agree with the nouns they refer to.

The Insert Text question is formatted differently in print versions of the test. See below for an example of what the Insert Text question will look like in the practice sets and tests of this book. Although the formatting is slightly different, the task you must complete is the same: indicate where the sentence would best fit in the passage.

Example

PASSAGE EXCERPT: "Scholars offer three related but different opinions about this puzzle. (A) One opinion is that the paintings were a record of the seasonal migrations made by herds. (B) Because some paintings were made directly over others, obliterating them, it is probable that a painting's value ended with the migration it pictured. (C) Unfortunately, this explanation fails to explain the hidden locations, unless the migrations were celebrated with secret ceremonies. (D)"

Directions: Look at the part of the passage that is displayed above. The letters (A), (B), (C), and (D) indicate where the following sentence could be added.

All three of them have strengths and weaknesses, but none adequately answers all of the questions the paintings present.

Where would the sentence best fit?

- (A) Choice A
- (B) Choice B
- C Choice C
- (D) Choice D

Explanation

In this example, choice A is the correct answer. The new sentence makes sense only if it occurs in the first position, after the first sentence. In that place, "All three of them" refers back to "three related but different opinions." The information in the sentence is a commentary on all three of the "opinions"; the opinions are related, but none is a complete explanation. Logically, this evaluation of all three opinions must come either as an introduction to the three opinions, or as a conclusion about all three. Only the introductory position is available, because the paragraph does not include all three opinions.

Reading to Learn Questions

There are two types of Reading to Learn questions: "Prose Summary" and "Fill in a Table." Reading to Learn questions require you to do more than the Basic Information questions. As you have seen, the Basic Information questions focus on your ability to understand or locate specific points in a passage at the sentence level. The Reading to Learn questions also involve:

- recognizing the organization and purpose of the passage
- organizing the information in the passage into a mental framework
- distinguishing major from minor ideas and essential from nonessential information
- understanding rhetorical functions such as cause-effect relationships, compare-contrast relationships, arguments, and the like

In other words, these questions require you to demonstrate an understanding of the passage as a whole, not just specific information within it.

Reading to Learn questions require you to show that you are able not only to comprehend individual points, but also to place the major ideas and supporting information from the passage into an organizational framework or structure such as a prose summary or a table. By answering correctly, you will demonstrate that you can recognize the major points of a text, how and why the text has been organized, and the nature of the relationships within the text. Having an organized mental representation of a text is critical to learning because it allows you to remember important information from the text and apply it in new situations. If you have such a mental framework, you should be able to reconstruct the major ideas and supporting information from the text. By doing so, you will demonstrate a global understanding of the text as a whole. On the *TOEFL*® test, each reading passage will have one Reading to Learn question. It will be either a Prose Summary or a Fill in a Table question, never both.

Type 9: Prose Summary Questions

These questions measure your ability to understand and recognize the major ideas and the relative importance of information in a passage. You will be asked to select the major ideas in the passage by distinguishing them from minor ideas or ideas that are not in the passage. The correct answer choice will synthesize major ideas in the passage. Because the correct answer represents a synthesis

of ideas, it will not match any particular sentence from the passage. To select the correct answer, you will need to create a mental framework to organize and remember major ideas and other important information. Understanding the relative importance of information in a passage is critical to this ability.

In a Prose Summary question, you will be given six answer choices and asked to pick the three that express the most important ideas in the passage. Unlike the Basic Information questions, each of which is worth just 1 point, a Prose Summary question is worth 2 points. You can earn 0 to 2 points depending on how many correct answers you choose. If you choose no correct answers or just one correct answer, you will earn no points. If you choose two correct answers, you will earn 1 point. If you choose all three correct answers, you will earn 2 points. The order in which you choose your answers does not matter for scoring purposes.

Example

Because the Prose Summary question asks you to show an understanding of the different parts of the passage, it is necessary to read the entire passage. Parts of the following passage have already been used to illustrate other question types.

APPLIED ARTS AND FINE ARTS

Although we now tend to refer to the various crafts according to the materials used to construct them—clay, glass, wood, fiber, and metal—it was once common to think of crafts in terms of function, which led to their being known as the "applied arts." Approaching crafts from the point of view of function, we can divide them into simple categories: containers, shelters, and supports. There is no way around the fact that containers, shelters, and supports must be functional. The applied arts are thus bound by the laws of physics, which pertain to both the materials used in their making and the substances and things to be contained, supported, and sheltered. These laws are universal in their application, regardless of cultural beliefs, geography, or climate. If a pot has no bottom or has large openings in its sides, it could hardly be considered a container in any traditional sense. Since the laws of physics, not some arbitrary decision, have determined the general form of applied-art objects, they follow basic patterns, so much so that functional forms can vary only within certain limits. Buildings without roofs, for example, are unusual because they depart from the norm. However, not all functional objects are exactly alike; that is why we recognize a Shang Dynasty vase as being different from an Inca vase. What varies is not the basic form but the incidental details that do not obstruct the object's primary function.

Sensitivity to physical laws is thus an important consideration for the maker of applied-art objects. It is often taken for granted that this is also true for the maker of fine-art objects. This assumption misses a significant difference between the two disciplines. Fine-art objects are not constrained by the laws of physics in the same way that applied-art objects are. Because their primary purpose is not functional, they are only limited in terms of the materials used to make them. Sculptures must, for example, be stable, which requires an understanding of the properties of mass, weight distribution, and stress. Paintings must have rigid stretchers so that the canvas will be taut, and the paint must not deteriorate, crack, or discolor. These are problems that must be overcome by the artist because they tend to intrude upon his or her conception of the work. For example, in the early Italian Renaissance, bronze statues of horses with a raised foreleg usually had a cannonball under that hoof. This

was done because the cannonball was needed to support the weight of the leg. In other words, the demands of the laws of physics, not the sculptor's aesthetic intentions, placed the ball there. That this device was a necessary structural compromise is clear from the fact that the cannonball quickly disappeared when sculptors learned how to strengthen the internal structure of a statue with iron braces (iron being much stronger than bronze).

Even though the fine arts in the twentieth century often treat materials in new ways, the basic difference in attitude of artists in relation to their materials in the fine arts and the applied arts remains relatively constant. It would therefore not be too great an exaggeration to say that practitioners of the fine arts work to overcome the limitations of their materials, whereas those engaged in the applied arts work in concert with their materials.

An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the THREE answer choices that express the most important ideas in the passage. Some sentences do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage. **This question is worth 2 points.**

This passage discusses fundamental differences between applied-art objects and fine-art objects.

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- •
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Answer Choices

- Applied-art objects fulfill functions, such as containing or sheltering, and objects with the same function have similar characteristics because they are constrained by their purpose.
- B It is easy to recognize that Shang Dynasty vases are different from Inca vases.
- Fine-art objects are not functional, so they are limited only by the properties of the materials used.
- Renaissance sculptors learned to use iron braces to strengthen the internal structures of bronze statues.
- E In the twentieth century, fine artists and applied artists became more similar to one another in their attitudes toward their materials.
- F In all periods, fine artists tend to challenge the physical limitations of their materials while applied artists tend to cooperate with the physical properties of their materials.

Explanation

Correct Choices

- *Choice A:* Applied-art objects fulfill functions, such as containing or sheltering, and objects with the same function have similar characteristics because they are constrained by their purpose.
- Explanation: As the introductory sentence states, the passage is mainly a contrast of applied-art objects and fine-art objects. The main point of contrast is functionality: applied-art objects are functional, whereas fine-art objects are not. The first part of the passage explains the consequences of functionality for the materials and "basic forms" of applied-art objects. The second part of the passage explains the consequences of not being functional to the materials and forms of fine-art objects. A good summary of the passage must include the definition of "applied-art objects" and the major consequence (objects with the same function will follow similar patterns), so choice A should be included.
- *Choice C:* Fine-art objects are not functional, so they are limited only by the properties of the materials used.
- *Explanation:* Because the passage contrasts applied-art objects and fine-art objects, a good summary should include the basic difference. Including choice C in the summary provides the basic contrast discussed in the passage: applied art objects are functional; fine-art objects are not. Fine-art objects are not as constrained as applied-art objects because they do not have to perform a function.
- *Choice F:* In all periods, fine artists tend to challenge the physical limitations of their materials, while applied artists tend to cooperate with the physical properties of their materials.
- *Explanation:* The last paragraph of the passage presents a further consequence of the basic contrast between applied-art objects and fine-art objects. This is the difference between the attitude of fine artists toward their materials and the attitude of applied artists toward their materials. A good summary will include this last contrast.

Incorrect Choices

- *Choice B*: It is easy to recognize that Shang Dynasty vases are different from Inca vases.
- Explanation: Although this statement is true, it is not the main point of the first paragraph or of the passage. In fact, it contrasts with the main point of the paragraph: objects that have the same function are all similar. The last sentence of the first paragraph says that the Shang Dynasty vase and the Inca vase are different in "incidental details," but the "basic form" is the same. Including choice B in the summary misrepresents the passage.
- *Choice D:* Renaissance sculptors learned to use iron braces to strengthen the internal structures of bronze statues.
- *Explanation:* Choice D summarizes the information in sentences 9, 10, and 11 of paragraph 2. Within the context of the passage, this information helps you

understand the meaning of the limitations that materials can impose on fine artists. However, remember that the directions say to choose the statements that express *the most important ideas in the passage*. The example is less important than the general statements of difference. If choice D is included, then choice A or C or F would be left out, and the summary would be missing an essential point of contrast between fine arts and applied arts.

Choice E: In the twentieth century, fine artists and applied artists became more similar to one another in their attitudes toward their materials.

Explanation: This choice should be excluded because it is not supported by the passage. It is a misreading of paragraph 3, which says that the difference in attitude between fine artists and applied artists has not changed. Obviously, a choice that contradicts the information or argument in the passage should not be part of your summary.

Type 10: Fill in a Table Questions

In this kind of question, you will be given a partially completed table based on information in the passage. Your job is to complete the table by clicking on correct answer choices and dragging them to their correct locations in the table.

Fill in a Table questions measure your ability to conceptualize and organize major ideas and other important information from across the passage and then to place them in appropriate categories. This means that you must first recognize and identify the major points from the passage and then place those points in their proper context.

Just as for Prose Summary questions, the able reader will create a mental framework to organize and remember major ideas and other important information.

Doing so requires the ability to understand rhetorical functions such as cause-effect relationships, compare-contrast relationships, arguments, and the like.

When building your mental framework, keep in mind that the major ideas in the passage are the ones you would include if you were making a fairly high-level outline of the passage. The correct answer choices are usually ideas that would be included in a slightly more detailed outline. Minor details and examples are generally not included in such an outline because they are used only to support the more important, higher-level themes. The distinction between major ideas/important information and less important information can also be thought of as a distinction between essential and nonessential information.

Passages used with Fill in a Table questions have more than one focus of development in that they include more than one point of view or perspective. Typical passages have the following types of organization: compare/contrast, problem/solution, cause/effect, alternative arguments (such as theories, hypotheses), and the like.

Correct answers represent major ideas and important supporting information in the passage. Generally these answers will not match specific phrases in the passage. They are more likely to be abstract concepts based on passage information or paraphrases of passage information. Correct answers will be easy to confirm by able readers who can remember or easily locate relevant text information.

Incorrect answers may include information about the topic that is not mentioned in the passage or that is not directly relevant to the classification categories in the table. They may also be obviously incorrect generalizations or conclusions based on what is stated in the passage. Be aware that incorrect answers may include words and phrases that match or resemble words or phrases in the passage.

Table Rules

Tables can have two or three columns/rows containing bullets representing four to five correct answer choices.

There will always be more answer choices than there are correct answers. Some answer choices will not be used.

An answer choice can be used only once in the table. If an answer choice applies to more than one answer category, or to no category in a table, a row or column labeled "both" or "neither" will be available in the table for placement of that answer choice.

Scoring

To earn points, you must select correct answer choices and organize the choices correctly in the table. You may receive partial credit, depending on how many correct answers you choose.

You can earn up to 2 points for tables with four correct answers and up to 3 points for tables with five correct answers. The number of points a particular table item is worth is indicated in the **Directions**.

On 2-point tables, you will receive no credit for selecting zero, one, or two correct answers. You will receive one point for three correct answers and two points for all four correct answers.

On 3-point tables, you will receive no credit for selecting zero, one, or two correct answers. You will receive one point for three correct answers, two points for four correct answers, and three points for all five correct answers.

Example

Note: The passage used for this example is the same one that was used above for the Prose Summary example question. In an actual test, you will not receive both a Prose Summary question and a Fill in a Table question about the same passage.

Directions: Complete the table below to summarize information about the two types of art discussed in the passage. Match the appropriate statements to the types of art with which they are associated. **This question is worth 3 points.**

TYPES OF ART	STATEMENTS
The Applied Arts	Select 3
	•
	•
	•
The Fire A 4	Calcara
The Fine Arts	Select 2
	•
	•

Statements

- An object's purpose is primarily aesthetic.
- B Objects serve a functional purpose.
- The incidental details of objects do not vary.
- D Artists work to overcome the limitations of their materials.
- E The basic form of objects varies little across cultures.
- F Artists work in concert with their materials.
- G An object's place of origin is difficult to determine.

Correctly Completed Table

Directions: Complete the table below to summarize information about the two types of art discussed in the passage. Match the appropriate statements to the types of art with which they are associated. **This question is worth 3 points.**

TYPES OF ART	STATEMENTS
The Applied Arts	Select 3
	B Objects serve a functional purpose.
	E The basic form of objects varies little across cultures.
	F Artists work in concert with their materials.
The Fine Arts	Select 2
	An object's purpose is primarily aesthetic.
	Artists work to overcome the limitations of their materials.

Explanation

Correct Choices

Choice A: An object's purpose is primarily aesthetic. (Fine Arts)

Explanation: This is an example of a correct answer that requires you to identify an abstract concept based on text information and paraphrases of text information. In paragraph 2, sentence 5, the passage states that the primary purpose of Fine Arts is not function. Then, in paragraph 2, sentence 11, the passage mentions a situation in which a sculptor had to sacrifice an aesthetic purpose due to the laws of physics. Putting these statements together, the reader can infer that fine artists, such as sculptors, are primarily concerned with aesthetics.

Choice B: Objects serve a functional purpose. (Applied Arts)

Explanation: This is stated more directly than the previous correct answer. In paragraph 1, sentences 1, 2, and 3 make it clear how important function is in the applied arts. At the same time, paragraph 2 states that Fine Arts are not concerned with function, so the only correct place for this statement is in the Applied Arts category.

Choice D: Artists work to overcome the limitations of their materials. (Fine Arts) *Explanation:* This is stated explicitly in the last paragraph of the passage. In that paragraph, it is made clear that this applies only to practitioners of the fine arts.

Choice E: The basic form of objects varies little across cultures. (Applied Arts)

Explanation: In paragraph 1, sentence 5, the passage states that certain laws of physics are universal. Then in sentence 7, that idea is further developed with the statement that functional forms can vary only within limits. From these two sentences, you can conclude that because of the laws of physics and the need for functionality, the basic forms of applied-art objects will vary little across cultures.

Choice F: Artists work in concert with their materials. (Applied Arts)

Explanation: This is stated explicitly in the last paragraph of the passage. In that paragraph, it is made clear that this applies only to practitioners of the applied arts.

Incorrect Choices

Choice C: The incidental details of objects do not vary.

Explanation: This idea is explicitly refuted by the last sentence of paragraph 1 in reference to the applied arts. That sentence (referring only to applied arts) states that the incidental details of such objects do vary, so this answer cannot be placed in the Applied Arts category. This subject is not discussed at all in reference to fine-art objects, so it cannot be correctly placed in that category either.

Choice G: An object's place of origin is difficult to determine.

Explanation: This answer choice is implicitly refuted in reference to applied arts in the next-to-last sentence of paragraph 1. That sentence notes that both Shang Dynasty and Inca vases are identifiable as such based upon differences in detail. By inference, then, it seems that it is not difficult to determine an applied-art object's place of origin. Like the previous incorrect answer, this idea is not discussed at all in reference to fine-art objects, so it cannot be correctly placed in that category either.

Strategies for Preparing for the Reading Section

Now that you are familiar with the 10 question types that are used in the $TOEFL^{\circledast}$ Reading section, you are ready to sharpen your skills by working on whole reading sets. In the following pages, you can practice on six reading sets created by ETS for the $TOEFL\ iBT^{\circledast}$ test. The question types are not labeled, but you should be able to identify them and understand what you need to do to answer each correctly. After each passage and question set you will find answers and explanations for each question.

In addition to practicing on these sets, here are some other suggestions for improving the skills that will help you perform well on the Reading section:

The best way to improve reading skills is to read frequently and to read many different types of texts in various subject areas (sciences, social sciences, arts, business, and others). The Internet is one of the best resources for this, and of course books, magazines, and journals are very helpful as well. Make sure to regularly read texts that are academic in style, the kind that are used in university courses.

Here are some suggestions for ways to build skills for the three reading purposes covered by the TOEFL iBT test.

1. Reading to find information

- Scan passages to find and highlight key facts (dates, numbers, terms) and information.
- Practice this frequently to increase reading rate and fluency.

2. Reading for basic comprehension

- Increase your vocabulary knowledge, perhaps by using flash cards.
- Rather than carefully reading each word and each sentence, practice skimming a passage quickly to get a general impression of the main idea.
- Build up your ability to skim quickly and to identify the major points.
- After skimming a passage, read it again more carefully and write down the main idea, major points, and important facts.
- Choose some unfamiliar words in a passage and guess the meaning from the context (surrounding sentences).
- Select all the pronouns (*he, him, they, them,* and others) and identify which nouns they refer to in a passage.
- Practice making inferences and drawing conclusions based on what is implied in the passage as a whole.

3. Reading to learn

- Identify the passage type (classification, cause/effect, compare/contrast, problem/solution, description, narration, and so on).
- Do the following to organize the information in the passage:
 - Create an outline of the passage to distinguish between major and minor points.
 - If the passage categorizes information, create a chart and place the information in appropriate categories. (Remember: on the test, you do not have to create such a chart. Instead, a chart with possible answer choices is provided for you, and you must fill in the chart with the correct choices.) Practicing this skill will help you think about categorizing information and be able to do so with ease.
 - If the passage describes the steps in a process, create an outline of the steps in their correct order.
- Create a summary of the passage using the charts and outlines.
- Paraphrase individual sentences in a passage, and then progress to paraphrasing an entire paragraph. Note: the *TOEFL iBT*[®] Reading section measures the ability to recognize paraphrases. The ability to paraphrase is also important for the integrated tasks in the Writing and Speaking sections of the test.

Reading Practice Sets

PRACTICE SET 1

THE ORIGINS OF CETACEANS

It should be obvious that cetaceans—whales, porpoises, and dolphins—are mammals. They breathe through lungs, not through gills, and give birth to live young. Their streamlined bodies, the absence of hind legs, and the presence of a fluke¹ and blowhole² cannot disguise their affinities with land-dwelling mammals. However, unlike the cases of sea otters and pinnipeds (seals, sea lions, and walruses, whose limbs are functional both on land and at sea), it is not easy to envision what the first whales looked like. Extinct but already fully marine cetaceans are known from the fossil record. How was the gap between a walking mammal and a swimming whale bridged? Missing until recently were fossils clearly intermediate, or transitional, between land mammals and cetaceans.

Very exciting discoveries have finally allowed scientists to reconstruct the most likely origins of cetaceans. In 1979, a team looking for fossils in northern Pakistan found what proved to be the oldest fossil whale. The fossil was officially named *Pakicetus* in honor of the country where the discovery was made. *Pakicetus* was found embedded in rocks formed from river deposits that were 52 million years old. The river that formed these deposits was actually not far from an ancient ocean known as the Tethys Sea.

The fossil consists of a complete skull of an archaeocyte, an extinct group of ancestors of modern cetaceans. Although limited to a skull, the *Pakicetus* fossil provides precious details on the origins of cetaceans. The skull is cetacean-like but its jawbones lack the enlarged space that is filled with fat or oil and used for receiving underwater sound in modern whales. *Pakicetus* probably detected sound through the ear opening as in land mammals. The skull also lacks a blowhole, another cetacean adaptation for diving. Other features, however, show experts that *Pakicetus* is a transitional form between a group of extinct flesh-eating mammals, the mesonychids, and cetaceans. It has been suggested that *Pakicetus* fed on fish in shallow water and was not yet adapted for life in the open ocean. It probably bred and gave birth on land.

Another major discovery was made in Egypt in 1989. Several skeletons of another early whale, *Basilosaurus*, were found in sediments left by the Tethys Sea and now exposed in the Sahara desert. This whale lived around 40 million years ago, 12 million years after *Pakicetus*. Many incomplete skeletons were found but they included, for the first time in an archaeocyte, a complete hind leg that features a foot with three tiny toes. Such legs would have been far too small to have supported the 50-foot-long *Basilosaurus* on land. *Basilosaurus* was undoubtedly a fully marine whale with possibly nonfunctional, or vestigial, hind legs.

An even more exciting find was reported in 1994, also from Pakistan. The now extinct whale *Ambulocetus natans* ("the walking whale that swam") lived in the Tethys Sea 49 million years ago. It lived around 3 million years after *Pakicetus* but 9 million years before *Basilosaurus*. The fossil luckily includes a good portion of the hind legs. The legs were strong and ended in long feet very much like those of a modern pinniped. The legs were certainly functional both on land and at sea. The whale retained a tail and lacked a fluke, the major means of

locomotion in modern cetaceans. The structure of the backbone shows, however, that *Ambulocetus* swam like modern whales by moving the rear portion of its body up and down, even though a fluke was missing. The large hind legs were used for propulsion in water. On land, where it probably bred and gave birth, *Ambulocetus* may have moved around very much like a modern sea lion. It was undoubtedly a whale that linked life on land with life at sea.

- 1. Fluke: The two parts that constitute the large triangular tail of a whale
- 2. Blowhole: A hole in the top of the head used for breathing

Directions: Now answer the questions.

It should be obvious that cetaceans—whales, porpoises, and dolphins—are mammals. They breathe through lungs, not through gills, and give birth to live young. Their streamlined bodies, the absence of hind legs, and the presence of a fluke¹ and blowhole² cannot disguise their affinities with land-dwelling mammals. However, unlike the cases of sea otters and pinnipeds (seals, sea lions, and walruses, whose limbs are functional both on land and at sea), it is not easy to envision what the first whales looked like. Extinct but already fully marine cetaceans are known from the fossil record. How was the gap between a walking mammal and a swimming whale bridged? Missing until recently were fossils clearly intermediate, or transitional, between land mammals and cetaceans.

- 1. Fluke: The two parts that constitute the large triangular tail of a whale
- 2. Blowhole: A hole in the top of the head used for breathing
- 1. Which of the following can be inferred from paragraph 1 about early sea otters?
 - (A) It is not difficult to imagine what they looked like.
 - (B) There were great numbers of them.
 - (C) They lived in the sea only.
 - ① They did not leave many fossil remains.

The fossil consists of a complete skull of an archaeocyte, an extinct group of ancestors of modern cetaceans. Although limited to a skull, the Pakicetus fossil provides precious details on the origins of cetaceans. The skull is cetacean-like but its jawbones lack the enlarged space that is filled with fat or oil and used for receiving underwater sound in modern whales. Pakicetus probably detected sound through the ear opening as in land mammals. The skull also lacks a blowhole, another cetacean adaptation for diving. Other features, however, show experts that Pakicetus is a transitional form between a group of extinct flesh-eating mammals, the mesonychids, and cetaceans. It has been suggested that Pakicetus fed on fish in shallow water and was not yet adapted for life in the open ocean. It probably bred and gave birth on land.

- 2. The word "precious" in the passage is closest in meaning to
 - (A) exact
 - (B) scarce
 - (C) valuable
 - (D) initial
- 3. Pakicetus and modern cetaceans have similar
 - (A) hearing structures
 - (B) adaptations for diving
 - © skull shapes
 - (D) breeding locations

- 4. The word "It" in the passage refers to
 - (A) Pakicetus
 - (B) fish
 - (C) life
 - (D) ocean

Another major discovery was made in Egypt in 1989. Several skeletons of another early whale, Basilosaurus, were found in sediments left by the Tethys Sea and now exposed in the Sahara desert. This whale lived around 40 million years ago, 12 million years after Pakicetus. Many incomplete skeletons were found but they included, for the first time in an archaeocyte, a complete hind leg that features a foot with three tiny toes. Such legs would have been far too small to have supported the 50-foot-long Basilosaurus on land. Basilosaurus was undoubtedly a fully marine whale with possibly nonfunctional, or vestigial, hind legs.

- 5. The word "exposed" in the passage is closest in meaning to
 - (A) explained
 - (B) visible
 - (C) identified
 - (D) located

- 6. The hind leg of Basilosaurus was a significant find because it showed that Basilosaurus
 - (A) lived later than Ambulocetus natans
 - (B) lived at the same time as **Pakicetus**
 - (C) was able to swim well
 - (D) could not have walked on land

An even more exciting find was reported in 1994, also from Pakistan. The now extinct whale *Ambulocetus natans* ("the walking whale that swam") lived in the Tethys Sea 49 million years ago. It lived around 3 million years after *Pakicetus* but 9 million years before *Basilosaurus*. The fossil luckily includes a good portion of the hind legs. The legs were strong and ended in long feet very much like those of a modern pinniped. The legs were certainly functional both on land and at sea. The whale retained a tail and lacked a fluke, the major means of locomotion in modern cetaceans. The structure of the backbone shows, however, that *Ambulocetus* swam like modern whales by moving the rear portion of its body up and down, even though a fluke was missing. The large hind legs were used for propulsion in water. On land, where it probably bred and gave birth, *Ambulocetus* may have moved around very much like a modern sea lion. It was undoubtedly a whale that linked life on land with life at sea.

- 7. Why does the author use the word "luckily" in mentioning that the Ambulocetus natans fossil included hind legs?
 - A Fossil legs of early whales are a rare find.
 - B The legs provided important information about the evolution of cetaceans.
 - The discovery allowed scientists to reconstruct a complete skeleton of the whale.
 - Until that time, only the front legs of early whales had been discovered.

- 8. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.
 - A Even though *Ambulocetus* swam by moving its body up and down, it did not have a backbone.
 - The backbone of Ambulocetus, which allowed it to swim, provides evidence of its missing fluke.
 - Although Ambulocetus had no fluke, its backbone structure shows that it swam like modern whales.
 - D By moving the rear parts of their bodies up and down, modern whales swim in a different way from the way *Ambulocetus* swam.

Extinct but already fully marine cetaceans are known from the fossil record. (A) How was the gap between a walking mammal and a swimming whale bridged? (B) Missing until recently were fossils clearly intermediate, or transitional, between land mammals and cetaceans.

(C) Very exciting discoveries have finally allowed scientists to reconstruct the most likely origins of cetaceans. (D) In 1979, a team looking for fossils in northern Pakistan found what proved to be the oldest fossil whale.

9. **Directions:** Look at the part of the passage that is displayed above. The letters (A), (B), (C), and (D) indicate where the following sentence could be added.

This is a question that has puzzled scientists for ages.

Where would the sentence best fit

- (A) Choice A
- (B) Choice B
- C Choice C
- (D) Choice D
- 10. **Directions:** An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the THREE answer choices that express the most important ideas in the passage. Some answer choices do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage. **This question is worth 2 points.**

This passage discusses fossils that help to explain the likely origins of cetaceans—whales, porpoises, and dolphins.

- •
- •
- •

Answer Choices

- A Recent discoveries of fossils have helped to show the link between land mammals and cetaceans.
- B The discovery of *Ambulocetus natans* provided evidence for a whale that lived both on land and at sea.
- C The skeleton of *Basilosaurus* was found in what had been the Tethys Sea, an area rich in fossil evidence.
- D *Pakicetus* is the oldest fossil whale yet to be found.
- **E** Fossils thought to be transitional forms between walking mammals and swimming whales were found.
- F Ambulocetus's hind legs were used for propulsion in the water.

PRACTICE SET 1 ANSWERS AND EXPLANATIONS

- 1. A This is an Inference question asking for information that can be inferred from paragraph 1. Choice A is the correct answer because paragraph 1 says that sea otters are unlike early mammals whose appearances are *not* easy to imagine. By inference, then, the early appearance of sea otters must be easy (or not difficult) to imagine.
- 2. This is a Vocabulary question. The word being tested is *precious*. It is highlighted in the passage. The correct answer is choice C, "valuable." Anything that is precious is very important and therefore valuable.
- 3. This is a Factual Information question asking for specific information that can be found in the passage. Choice C is the correct answer. Paragraph 3 describes the differences and similarities between *Pakicetus* and modern cetaceans. Sentence 3 of that paragraph states that their skulls are similar. The other three choices describe differences, not similarities.
- 4. A This is a Reference question. The word being tested is *It*. That word is highlighted in the passage. This is a simple pronoun-referent item. Choice A, "*Pakicetus*," is the correct answer. The word *It* here refers to a creature that probably bred and gave birth on land. *Pakicetus* is the only one of the choices to which this could apply.
- 5. **B** This is a Vocabulary question. The word being tested is *exposed*. It is highlighted in the passage. The correct answer is choice B, "visible." *Exposed* means "uncovered." A skeleton that is uncovered can be seen. *Visible* means "can be seen."
- 6. This is a Factual Information question asking for specific information that can be found in the passage. Choice D is the correct answer because it is the only detail about the skeleton of *Basilosaurus* mentioned in paragraph 4, meaning that it is significant. Choice A is true, but it is not discussed in the detail that choice D is, and does not represent the significance of the discovery. Choice C is not mentioned, and choice B is not true.
- 7. B This is an Inference question asking for a conclusion that can be drawn from the passage. Paragraph 5 explains that this discovery provided important information to scientists that they might not have been able to obtain without it. Therefore you can infer that the discovery was a "lucky" one. The passage offers no support for the other choices. Therefore choice B is the correct answer.

8. This is a Sentence Simplification question. As with all of these questions, a single sentence in the passage is highlighted:

The structure of the backbone shows, however, that *Ambulocetus* swam like modern whales by moving the rear portion of its body up and down, even though a fluke was missing.

Choice C is the correct answer because it contains all of the essential information in the highlighted sentence. Choice A is not true because *Ambulocetus* did have a backbone. Choice B is not true because the sentence says that the backbone showed how the *Ambulocetus* swam, not that it was missing a fluke. Choice D is not true because the sentence states that *Ambulocetus* and modern whales swam in the same way.

9. B This is an Insert Text question. You can see the four possible answer choices in paragraphs 1 and 2.

Extinct but already fully marine cetaceans are known from the fossil record. (A) How was the gap between a walking mammal and a swimming whale bridged? (B) Missing until recently were fossils clearly intermediate, or transitional, between land mammals and cetaceans.

(C) Very exciting discoveries have finally allowed scientists to reconstruct the most likely origins of cetaceans. (D) In 1979, a team looking for fossils in northern Pakistan found what proved to be the oldest fossil whale.

The sentence provided is "This is a question that has puzzled scientists for ages." The correct place to insert it is at choice (B).

The sentence that precedes choice **(B)** is in the form of a rhetorical question, and the inserted sentence explicitly provides a response to it. None of the other sentences is a question, so the inserted sentence cannot logically follow any one of them.

10. A B This is a Prose Summary question. It is completed correctly below. The correct choices are A, B, and E. Choices C, D, and F are therefore incorrect.

Directions: An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the THREE answer choices that express the most important ideas in the passage. Some answer choices do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage. **This question is worth 2 points.**

This passage discusses fossils that help to explain the likely origins of cetaceans—whales, porpoises, and dolphins.

- A Recent discoveries of fossils have helped to show the link between land mammals and cetaceans.
- B The discovery of Ambulocetus natans provided evidence for a whale that lived both on land and at sea.
- **E** Fossils thought to be transitional forms between walking mammals and swimming whales were found.

Answer Choices

- A Recent discoveries of fossils have helped to show the link between land mammals and cetaceans.
- B The discovery of *Ambulocetus natans* provided evidence for a whale that lived both on land and at sea.
- The skeleton of *Basilosaurus* was found in what had been the Tethys Sea, an area rich in fossil evidence.
- D *Pakicetus* is the oldest fossil whale yet to be found.
- **E** Fossils thought to be transitional forms between walking mammals and swimming whales were found.
- F Ambulocetus's hind legs were used for propulsion in the water.

Correct Choices

- Choice A, "Recent discoveries of fossils have helped to show the link between land mammals and cetaceans," is correct because it represents the major idea of the entire passage. The bulk of the passage consists of a discussion of the major discoveries (*Pakicetus*, *Basilosaurus*, and *Ambulocetus*) that show this link.
- Choice B, "The discovery of Ambulocetus natans provided evidence for a whale that lived both on land and at sea," is correct because it is one of the major discoveries cited in the passage in support of the passage's main point, that land mammals and cetaceans are related.
- Choice E, "Fossils thought to be transitional forms between walking mammals and swimming whales were found," is correct because like choice A, this is a statement of the passage's major theme as stated in paragraph 1: these fossils were "clearly intermediate, or transitional, between land mammals and cetaceans." The remainder of the passage discusses these discoveries.

Incorrect Choices

- *Choice C*, "The skeleton of *Basilosaurus* was found in what had been the Tethys Sea, an area rich in fossil evidence," is true, but it is a minor detail and therefore incorrect.
- *Choice D, "Pakicetus* is the oldest fossil whale yet to be found," is true, but it is a minor detail and therefore incorrect.
- *Choice F*, "*Ambulocetus*'s hind legs were used for propulsion in the water," is true, but it is a minor detail and therefore incorrect.

PRACTICE SET 2

DESERT FORMATION

The deserts, which already occupy approximately a fourth of the Earth's land surface, have in recent decades been increasing at an alarming pace. The expansion of desertlike conditions into areas where they did not previously exist is called **desertification**. It has been estimated that an additional one-fourth of the Earth's land surface is threatened by this process.

Desertification is accomplished primarily through the loss of stabilizing natural vegetation and the subsequent accelerated erosion of the soil by wind and water. In some cases the loose soil is blown completely away, leaving a stony surface. In other cases, the finer particles may be removed, while the sand-sized particles are accumulated to form mobile hills or ridges of sand.

Even in the areas that retain a soil cover, the reduction of vegetation typically results in the loss of the soil's ability to absorb substantial quantities of water. The impact of raindrops on the loose soil tends to transfer fine clay particles into the tiniest soil spaces, sealing them and producing a surface that allows very little water penetration. Water absorption is greatly reduced; consequently, runoff is increased, resulting in accelerated erosion rates. The gradual drying of the soil caused by its diminished ability to absorb water results in the further loss of vegetation, so that a cycle of progressive surface deterioration is established.

In some regions, the increase in desert areas is occurring largely as the result of a trend toward drier climatic conditions. Continued gradual global warming has produced an increase in aridity for some areas over the past few thousand years. The process may be accelerated in subsequent decades if global warming resulting from air pollution seriously increases.

There is little doubt, however, that desertification in most areas results primarily from human activities rather than natural processes. The semiarid lands bordering the deserts exist in a delicate ecological balance and are limited in their potential to adjust to increased environmental pressures. Expanding populations are subjecting the land to increasing pressures to provide them with food and fuel. In wet periods, the land may be able to respond to these stresses. During the dry periods that are common phenomena along the desert margins, though, the pressure on the land is often far in excess of its diminished capacity, and desertification results.

Four specific activities have been identified as major contributors to the desertification process: overcultivation, overgrazing, firewood gathering, and overirrigation. The cultivation of crops has expanded into progressively drier regions as population densities have grown. These regions are especially likely to have periods of severe dryness, so that crop failures are common. Since the raising of most crops necessitates the prior removal of the natural vegetation, crop failures leave extensive tracts of land devoid of a plant cover and susceptible to wind and water erosion.

The raising of livestock is a major economic activity in semiarid lands, where grasses are generally the dominant type of natural vegetation. The consequences of an excessive number of livestock grazing in an area are the reduction of the vegetation cover and the trampling and pulverization of the soil. This is usually followed by the drying of the soil and accelerated erosion.

P A R A G R A P H Firewood is the chief fuel used for cooking and heating in many countries. The increased pressures of expanding populations have led to the removal of woody plants so that many cities and towns are surrounded by large areas completely lacking in trees and shrubs. The increasing use of dried animal waste as a substitute fuel has also hurt the soil because this valuable soil conditioner and source of plant nutrients is no longer being returned to the land.

The final major human cause of desertification is soil salinization resulting from overirrigation. Excess water from irrigation sinks down into the water table. If no drainage system exists, the water table rises, bringing dissolved salts to the surface. The water evaporates and the salts are left behind, creating a white crustal layer that prevents air and water from reaching the underlying soil.

The extreme seriousness of desertification results from the vast areas of land and the tremendous numbers of people affected, as well as from the great difficulty of reversing or even slowing the process. Once the soil has been removed by erosion, only the passage of centuries or millennia will enable new soil to form. In areas where considerable soil still remains, though, a rigorously enforced program of land protection and cover-crop planting may make it possible to reverse the present deterioration of the surface.

Directions: Now answer the questions.

The deserts, which already occupy approximately a fourth of the Earth's land surface, have in recent decades been increasing at an alarming pace. The expansion of desertlike conditions into areas where they did not previously exist is called **desertification**. It has been estimated that an additional one-fourth of the Earth's land surface is threatened by this process.

- 1. The word "threatened" in the passage is closest in meaning to
 - (A) restricted
 - **B** endangered
 - © prevented
 - (D) rejected

Even in the areas that retain a soil cover, the reduction of vegetation typically results in the loss of the soil's ability to absorb substantial quantities of water. The impact of raindrops on the loose soil tends to transfer fine clay particles into the tiniest soil spaces, sealing them and producing a surface that allows very little water penetration. Water absorption is greatly reduced; consequently, runoff is increased, resulting in accelerated erosion rates. The gradual drying of the soil caused by its diminished ability to absorb water results in the further loss of vegetation, so that a cycle of progressive surface deterioration is established.

- 2. According to paragraph 3, the loss of natural vegetation has which of the following consequences for soil?
 - (A) Increased stony content
 - (B) Reduced water absorption
 - (C) Increased numbers of spaces in the soil
 - Reduced water runoff

There is little doubt, however, that desertification in most areas results primarily from human activities rather than natural processes. The semiarid lands bordering the deserts exist in a delicate ecological balance and are limited in their potential to adjust to increased environmental pressures. Expanding populations are subjecting the land to increasing pressures to provide them with food and fuel. In wet periods, the land may be able to respond to these stresses. During the dry periods that are common phenomena along the desert margins, though, the pressure on the land is often far in excess of its diminished capacity, and desertification results.

- 3. The word "delicate" in the passage is closest in meaning to
 - (A) fragile
 - **B** predictable
 - © complex
 - valuable

- 4. According to paragraph 5, in dry periods, border areas have difficulty
 - A adjusting to stresses created by settlement
 - B retaining their fertility after desertification
 - © providing water for irrigating crops
 - attracting populations in search of food and fuel

Four specific activities have been identified as major contributors to the desertification process: overcultivation, overgrazing, firewood gathering, and overirrigation. The cultivation of crops has expanded into progressively drier regions as population densities have grown. These regions are especially likely to have periods of severe dryness, so that crop failures are common. Since the raising of most crops necessitates the prior removal of the natural vegetation, crop failures leave extensive tracts of land devoid of a plant cover and susceptible to wind and water erosion.

- 5. The word "progressively" in the passage is closest in meaning to
 - (A) openly
 - **B** impressively
 - © objectively
 - increasingly

- 6. According to paragraph 6, which of the following is often associated with raising crops?
 - (A) Lack of proper irrigation techniques
 - B Failure to plant crops suited to the particular area
 - © Removal of the original vegetation
 - D Excessive use of dried animal waste

The final major human cause of desertification is soil salinization resulting from overirrigation. Excess water from irrigation sinks down into the water table. If no drainage system exists, the water table rises, bringing dissolved salts to the surface. The water evaporates and the salts are left behind, creating a white crustal layer that prevents air and water from reaching the underlying soil.

- 7. According to paragraph 9, the ground's absorption of excess water is a factor in desertification because it can
 - (A) interfere with the irrigation of land
 - (B) limit the evaporation of water
 - © require more absorption of air by the soil
 - D bring salts to the surface

The extreme seriousness of desertification results from the vast areas of land and the tremendous numbers of people affected, as well as from the great difficulty of reversing or even slowing the process. Once the soil has been removed by erosion, only the passage of centuries or millennia will enable new soil to form. In areas where considerable soil still remains, though, a rigorously enforced program of land protection and cover-crop planting may make it possible to reverse the present deterioration of the surface.

- 8. Which of the sentences below best expresses the essential information in the high-lighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.
 - (A) Desertification is a significant problem because it is so hard to reverse and affects large areas of land and great numbers of people.
 - B Slowing down the process of desertification is difficult because of population growth that has spread over large areas of land.
 - The spread of deserts is considered a very serious problem that can be solved only if large numbers of people in various countries are involved in the effort.
 - Desertification is extremely hard to reverse unless the population is reduced in the vast areas affected.

- (A) The raising of livestock is a major economic activity in semiarid lands, where grasses are generally the dominant type of natural vegetation. (B) The consequences of an excessive number of livestock grazing in an area are the reduction of the vegetation cover and the trampling and pulverization of the soil. (C) This is usually followed by the drying of the soil and accelerated erosion. (D)
- 9. **Directions:** Look at the part of the passage that is displayed above. The letters (A), (B), (C), and (D) indicate where the following sentence could be added.

This economic reliance on livestock in certain regions makes large tracts of land susceptible to overgrazing.

- (A) Choice A
- (B) Choice B
- (C) Choice C
- (D) Choice D
- 10. **Directions:** An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the THREE answer choices that express the most important ideas in the passage. Some answer choices do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage. **This question is worth 2 points.**

Many factors have contributed to the great increase in desertification in recent decades.

- •
- •
- •

- A Growing human populations and the agricultural demands that come with such growth have upset the ecological balance in some areas and led to the spread of deserts.
- B As periods of severe dryness have become more common, failures of a number of different crops have increased.
- Excessive numbers of cattle and the need for firewood for fuel have reduced grasses and trees, leaving the land unprotected and vulnerable.
- Extensive irrigation with poor drainage brings salt to the surface of the soil, a process that reduces water and air absorption.
- E Animal dung enriches the soil by providing nutrients for plant growth.
- F Grasses are generally the dominant type of natural vegetation in semiarid lands.

PRACTICE SET 2 ANSWERS AND EXPLANATIONS

- 1. **B** This is a Vocabulary question. The word being tested is *threatened*. It is highlighted in the passage. To threaten is to speak or act as if you will cause harm to someone or something. The object of the threat is in danger of being hurt, so the correct answer is choice B, "endangered."
- 3. A This is a Vocabulary question. The word being tested is *delicate*. It is highlighted in the passage. The correct answer is choice A, "fragile," meaning "easily broken." *Delicate* has the same meaning as *fragile*.
- 4. A This is a Factual Information question asking for specific information that can be found in paragraph 5. The correct answer is choice A: border areas have difficulty "adjusting to stresses created by settlement." The paragraph says that "expanding populations," or settlement, subject border areas to "pressures," or stress, that the land may not "be able to respond to." Choice B is incorrect because the paragraph does not discuss "fertility" after desertification. Choice C is also incorrect because "irrigation" is not mentioned here. The paragraph mentions "increasing populations" but not the difficulty of "attracting populations," so choice D is incorrect.
- 5. This is a Vocabulary question. The word being tested is *progressively*. It is highlighted in the passage. The correct answer is choice D, "increasingly." *Progressively* as it is used here means "more," and "more" of something means that it is increasing.
- 6. This is a Factual Information question asking for specific information that can be found in paragraph 6. The correct answer is choice C, "removal of the original vegetation." Sentence 4 of this paragraph says that "the raising of most crops necessitates the prior removal of the natural vegetation," an explicit statement of answer choice C. Choice A, "lack of proper irrigation techniques," is incorrect because the paragraph mentions only "overirrigation" as a cause of desertification. No irrigation "techniques" are discussed. Choices B and D, failure to plant suitable crops and use of animal waste, are not discussed.

- 7. This is a Factual Information question asking for specific information that can be found in paragraph 9. The correct answer is choice D, "bring salts to the surface." The paragraph says that the final human cause of desertification is salinization resulting from overirrigation. The paragraph goes on to say that the overirrigation causes the water table to rise, bringing salts to the surface. There is no mention of the process as "interfering" with or "limiting" irrigation, or of the "amount of air" the soil is required to absorb, so choices A, B, and C are all incorrect.
- 8. A This is a Sentence Simplification question. As with all of these questions, a single sentence in the passage is highlighted:

The extreme seriousness of desertification results from the vast areas of land and the tremendous numbers of people affected, as well as from the great difficulty of reversing or even slowing the process.

The correct answer is choice A. That choice contains all of the essential information in the highlighted sentence and does not change its meaning. The only substantive difference between choice A and the tested sentence is the order in which the information is presented. Two clauses in the highlighted sentence, "the great difficulty of reversing . . . the process" and "the tremendous numbers of people affected," have simply been reversed; no meaning has been changed, and no information has been removed. Choices B, C, and D are all incorrect because they change the meaning of the highlighted sentence.

- 9. **B** This is an Insert Text question. You can see the four possible answer choices in paragraph 7.
- (A) The raising of livestock is a major economic activity in semiarid lands, where grasses are generally the dominant type of natural vegetation. (B) The consequences of an excessive number of livestock grazing in an area are the reduction of the vegetation cover and the trampling and pulverization of the soil. (C) This is usually followed by the drying of the soil and accelerated erosion. (D)

The sentence provided, "This economic reliance on livestock in certain regions makes large tracts of land susceptible to overgrazing," is best inserted at choice (B). The inserted sentence refers explicitly to relying on "livestock in certain regions." Those regions are the ones described in the sentence preceding choice (B), which states that raising livestock is "a major economic activity in semiarid lands." The inserted sentence then explains that this reliance "makes large tracts of land susceptible to overgrazing." The sentence that follows choice (B) goes on to say that "The consequences of an excessive number of livestock grazing in an area are . . ." Thus the inserted sentence contains references to both the sentence before choice (B) and the sentence after choice (B). This is not true of any of the other possible insert points, so choice (B) is correct.

10. (A C D This is a Prose Summary question. It is completed correctly below. The correct choices are A, C, and D. Choices B, E, and F are therefore incorrect.

Directions: An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the THREE answer choices that express the most important ideas in the passage. Some answer choices do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage. **This question is worth 2 points.**

Many factors have contributed to the great increase in desertification in recent decades.

- A Growing human populations and the agricultural demands that come with such growth have upset the ecological balance in some areas and led to the spread of deserts.
- **C** Excessive numbers of cattle and the need for firewood for fuel have reduced grasses and trees, leaving the land unprotected and vulnerable.
- **D** Extensive irrigation with poor drainage brings salt to the surface of the soil, a process that reduces water and air absorption.

- A Growing human populations and the agricultural demands that come with such growth have upset the ecological balance in some areas and led to the spread of deserts.
- B As periods of severe dryness have become more common, failures of a number of different crops have increased.
- Excessive numbers of cattle and the need for firewood for fuel have reduced grasses and trees, leaving the land unprotected and vulnerable.
- Extensive irrigation with poor drainage brings salt to the surface of the soil, a process that reduces water and air absorption.
- E Animal dung enriches the soil by providing nutrients for plant growth.
- F Grasses are generally the dominant type of natural vegetation in semiarid lands.

Correct Choices

- Choice A, "Growing human populations and the agricultural demands that come with such growth have upset the ecological balance in some areas and led to the spread of deserts," is correct because it is a recurring theme in the passage, one of the main ideas. Paragraphs 5, 6, 7, and 9 all provide details in support of this statement.
- Choice C, "Excessive numbers of cattle and the need for firewood for fuel have reduced grasses and trees, leaving the land unprotected and vulnerable," is correct because these are two of the human activities that are major causes of desertification. The causes of desertification is the main theme of the passage. Paragraphs 6, 7, and 8 are devoted to describing how these activities contribute to desertification.
- Choice *D*, "Extensive irrigation with poor drainage brings salt to the surface of the soil, a process that reduces water and air absorption," is correct because it is another of the human activities that are a major cause of desertification, the main theme of the passage. Paragraph 6 mentions this first, then all of paragraph 9 is devoted to describing how this activity contributes to desertification.

Incorrect Choices

- *Choice B*, "As periods of severe dryness have become more common, failures of a number of different crops have increased," is incorrect because it is a supporting detail, not a main idea of the passage.
- *Choice E*, "Animal dung enriches the soil by providing nutrients for plant growth," is incorrect because it is contradicted by paragraph 8 of the passage.
- *Choice F*, "Grasses are generally the dominant type of natural vegetation in semiarid lands," is incorrect because it is a minor detail, mentioned once in passing in paragraph 7.

PRACTICE SET 3

EARLY CINEMA

The cinema did not emerge as a form of mass consumption until its technology evolved from the initial "peepshow" format to the point where images were projected on a screen in a darkened theater. In the peepshow format, a film was viewed through a small opening in a machine that was created for that purpose. Thomas Edison's peepshow device, the Kinetoscope, was introduced to the public in 1894. It was designed for use in Kinetoscope parlors, or arcades, which contained only a few individual machines and permitted only one customer to view a short, 50-foot film at any one time. The first Kinetoscope parlors contained five machines. For the price of 25 cents (or 5 cents per machine), customers moved from machine to machine to watch five different films (or, in the case of famous prizefights, successive rounds of a single fight).

These Kinetoscope arcades were modeled on phonograph parlors, which had proven successful for Edison several years earlier. In the phonograph parlors, customers listened to recordings through individual ear tubes, moving from one machine to the next to hear different recorded speeches or pieces of music. The Kinetoscope parlors functioned in a similar way. Edison was more interested in the sale of Kinetoscopes (for roughly \$1,000 apiece) to these parlors than in the films that would be run in them (which cost approximately \$10 to \$15 each). He refused to develop projection technology, reasoning that if he made and sold projectors, then exhibitors would purchase only one machine—a projector—from him instead of several.

Exhibitors, however, wanted to maximize their profits, which they could do more readily by projecting a handful of films to hundreds of customers at a time (rather than one at a time) and by charging 25 to 50 cents admission. About a year after the opening of the first Kinetoscope parlor in 1894, showmen such as Louis and Auguste Lumière, Thomas Armat and Charles Francis Jenkins, and Orville and Woodville Latham (with the assistance of Edison's former assistant, William Dickson) perfected projection devices. These early projection devices were used in vaudeville theaters, legitimate theaters, local town halls, makeshift storefront theaters, fairgrounds, and amusement parks to show films to a mass audience.

With the advent of projection in 1895–1896, motion pictures became the ultimate form of mass consumption. Previously, large audiences had viewed spectacles at the theater, where vaudeville, popular dramas, musical and minstrel shows, classical plays, lectures, and slide-and-lantern shows had been presented to several hundred spectators at a time. But the movies differed significantly from these other forms of entertainment, which depended on either live performance or (in the case of the slide-and-lantern shows) the active involvement of a master of ceremonies who assembled the final program.

Although early exhibitors regularly accompanied movies with live acts, the substance of the movies themselves is mass-produced, prerecorded material that can easily be reproduced by theaters with little or no active participation by the exhibitor. Even though early exhibitors shaped their film programs by mixing films and other entertainments together in whichever way they thought would be most attractive to audiences or by accompanying them with lectures, their creative control remained limited. What audiences came to see was the technological marvel of the movies; the lifelike reproduction of the commonplace

motion of trains, of waves striking the shore, and of people walking in the street; and the magic made possible by trick photography and the manipulation of the camera.

With the advent of projection, the viewer's relationship with the image was no longer private, as it had been with earlier peepshow devices such as the Kinetoscope and the Mutoscope, which was a similar machine that reproduced motion by means of successive images on individual photographic cards instead of on strips of celluloid. It suddenly became public—an experience that the viewer shared with dozens, scores, and even hundreds of others. At the same time, the image that the spectator looked at expanded from the minuscule peepshow dimensions of 1 or 2 inches (in height) to the life-size proportions of 6 or 9 feet.

Directions: Now answer the questions.

The cinema did not emerge as a form of mass consumption until its technology evolved from the initial "peepshow" format to the point where images were projected on a screen in a darkened theater. In the peepshow format, a film was viewed through a small opening in a machine that was created for that purpose. Thomas Edison's peepshow device, the Kinetoscope, was introduced to the public in 1894. It was designed for use in Kinetoscope parlors, or arcades, which contained only a few individual machines and permitted only one customer to view a short, 50-foot film at any one time. The first Kinetoscope parlors contained five machines. For the price of 25 cents (or 5 cents per machine), customers moved from machine to machine to watch five different films (or, in the case of famous prizefights, successive rounds of a single fight).

- 1. According to paragraph 1, all of the following were true of viewing films in Kinetoscope parlors EXCEPT:
 - (A) One individual at a time viewed a film.
 - (B) Customers could view one film after another.
 - (C) Prizefights were the most popular subjects for films.
 - (D) Each film was short.

These Kinetoscope arcades were modeled on phonograph parlors, which had proven successful for Edison several years earlier. In the phonograph parlors, customers listened to recordings through individual ear tubes, moving from one machine to the next to hear different recorded speeches or pieces of music. The Kinetoscope parlors functioned in a similar way. Edison was more interested in the sale of Kinetoscopes (for roughly \$1,000 apiece) to these parlors than in the films that would be run in them (which cost approximately \$10 to \$15 each). He refused to develop projection technology, reasoning that if he made and sold projectors, then exhibitors would purchase only one machine—a projector—from him instead of several.

- 2. The author discusses phonograph parlors in paragraph 2 in order to
 - A explain Edison's financial success
 - B describe the model used to design Kinetoscope parlors
 - © contrast their popularity to that of Kinetoscope parlors
 - illustrate how much more technologically advanced Kinetoscope parlors were
- 3. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect answer choices change the meaning in important ways or leave out essential information.
 - A Edison was more interested in developing a variety of machines than in developing a technology based on only one.
 - B Edison refused to work on projection technology because he did not think exhibitors would replace their projectors with newer machines.
 - © Edison did not want to develop projection technology because it limited the number of machines he could sell.
 - Edison would not develop projection technology unless exhibitors agreed to purchase more than one projector from him.

Exhibitors, however, wanted to maximize their profits, which they could do more readily by projecting a handful of films to hundreds of customers at a time (rather than one at a time) and by charging 25 to 50 cents admission. About a year after the opening of the first Kinetoscope parlor in 1894, showmen such as Louis and Auguste Lumière, Thomas Armat and Charles Francis Jenkins, and Orville and Woodville Latham (with the assistance of Edison's former assistant, William Dickson) perfected projection devices. These early projection devices were used in vaudeville theaters, legitimate theaters, local town halls, makeshift storefront theaters, fairgrounds, and amusement parks to show films to a mass audience.

- 4. The word "readily" in the passage is closest in meaning to
 - (A) frequently
 - (B) easily
 - © intelligently
 - **(D)** obviously

With the advent of projection in 1895–1896, motion pictures became the ultimate form of mass consumption. Previously, large audiences had viewed spectacles at the theater, where vaudeville, popular dramas, musical and minstrel shows, classical plays, lectures, and slide-and-lantern shows had been presented to several hundred spectators at a time. But the movies differed significantly from these other forms of entertainment, which depended on either live performance or (in the case of the slide-and-lantern shows) the active involvement of a master of ceremonies who assembled the final program.

- 5. According to paragraph 4, how did the early movies differ from previous spectacles that were presented to large audiences?
 - (A) They were a more expensive form of entertainment.
 - B They were viewed by larger audiences.
 - (C) They were more educational.
 - ① They did not require live entertainers.

Although early exhibitors regularly accompanied movies with live acts, the substance of the movies themselves is mass-produced, prerecorded material that can easily be reproduced by theaters with little or no active participation by the exhibitor. Even though early exhibitors shaped their film programs by mixing films and other entertainments together in whichever way they thought would be most attractive to audiences or by accompanying them with lectures, their creative control remained limited. What audiences came to see was the technological marvel of the movies; the lifelike reproduction of the commonplace motion of trains, of waves striking the shore, and of people walking in the street; and the magic made possible by trick photography and the manipulation of the camera.

- 6. According to paragraph 5, what role did early exhibitors play in the presentation of movies in theaters?
 - (A) They decided how to combine various components of the film program.
 - **B** They advised filmmakers on appropriate movie content.
 - They often took part in the live-action performances.
 - ① They produced and prerecorded the material that was shown in the theaters.

With the advent of projection, the viewer's relationship with the image was no longer private, as it had been with earlier peepshow devices such as the Kinetoscope and the Mutoscope, which was a similar machine that reproduced motion by means of successive images on individual photographic cards instead of on strips of celluloid. It suddenly became public—an experience that the viewer shared with dozens, scores, and even hundreds of others. At the same time, the image that the spectator looked at expanded from the minuscule peepshow dimensions of 1 or 2 inches (in height) to the life-size proportions of 6 or 9 feet.

- 7. The word "It" in the passage refers to
 - (A) the advent of projection
 - **B** the viewer's relationship with the image
 - (C) a similar machine
 - (D) celluloid

- 8. According to paragraph 6, the images seen by viewers in the earlier peepshows, compared with the images projected on the screen, were relatively
 - (A) small in size
 - (B) inexpensive to create
 - (C) unfocused
 - (D) limited in subject matter

(A) Exhibitors, however, wanted to maximize their profits, which they could do more readily by projecting a handful of films to hundreds of customers at a time (rather than one at a time) and by charging 25 to 50 cents admission. (B) About a year after the opening of the first Kinetoscope parlor in 1894, showmen such as Louis and Auguste Lumière, Thomas Armat and Charles Francis Jenkins, and Orville and Woodville Latham (with the assistance of Edison's former assistant, William Dickson) perfected projection devices. (C) These early projection devices were used in vaudeville theaters, legitimate theaters, local town halls, makeshift storefront theaters, fairgrounds, and amusement parks to show films to a mass audience. (D)

9. **Directions:** Look at the part of the passage that is displayed above. The letters (A), (B), (C), and (D) indicate where the following sentence could be added.

When this widespread use of projection technology began to hurt his Kinetoscope business, Edison acquired a projector developed by Armat and introduced it as "Edison's latest marvel, the Vitascope."

Where would tl	e sentence	best	fit?
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- (A) Choice A
- B Choice B
- C Choice C
- (D) Choice D
- 10. **Directions:** An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the THREE answer choices that express the most important ideas in the passage. Some answer choices do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage. **This question is worth 2 points.**

The technology for modern cinema evolved at the end of the nineteenth century.

- •
- •
- •

- A Kinetoscope parlors for viewing films were modeled on phonograph parlors.
- B Thomas Edison's design of the Kinetoscope inspired the development of large-screen projection.
- © Early cinema allowed individuals to use special machines to view films privately.
- D Slide-and-lantern shows had been presented to audiences of hundreds of spectators.
- E The development of projection technology made it possible to project images on a large screen.
- F Once film images could be projected, the cinema became a form of mass consumption.

PRACTICE SET 3 ANSWERS AND EXPLANATIONS

- 1. This is a Negative Factual Information question asking for specific information that can be found in paragraph 1. Choice C is the correct answer. The paragraph does mention that one viewer at a time could view the films (choice A), that films could be viewed one after another (choice B), and that films were short (choice D). Prizefights are mentioned as one subject of these short films, but not necessarily the most popular one.
- 3. This is a Sentence Simplification question. As with all of these questions, a single sentence in the passage is highlighted:

He refused to develop projection technology, reasoning that if he made and sold projectors, then exhibitors would purchase only one machine—a projector—from him, instead of several.

The correct answer is choice C. That choice contains all of the essential ideas in the highlighted sentence. It is also the only choice that does not change the meaning of the sentence. Choice A says that Edison was more interested in developing a variety of machines, which is not true. Choice B says that the reason Edison refused to work on projection technology was that exhibitors would never replace the projectors. That also is not true; the highlighted sentence implies that he refused to do this because he wanted exhibitors to buy several Kinetoscope machines at a time instead of a single projector. Choice D says that Edison refused to develop projection technology unless exhibitors agreed to purchase more than one projector from him. The highlighted sentence actually says that Edison had already reasoned or concluded that exhibitors would not buy more than one, so choice D is a change in essential meaning.

- 4. **B** This is a Vocabulary question. The word being tested is *readily*. It is highlighted in the passage. *Readily* means "easily," so choice B is the correct answer. The other choices do not fit in the context of the sentence.
- 5. This is a Factual Information question asking for specific information that can be found in paragraph 4. The correct answer is choice D. Early movies were different from previous spectacles because they did not require live actors. The paragraph states (emphasis added):

"But the movies differed significantly from these other forms of entertainment, which depended on either *live performance* or (in the case of the slide-and-lantern shows) the active involvement of a master of ceremonies who assembled the final program."

So the fact that previous spectacles depended on live performances is explicitly stated as one of the ways (but not the only way) that those earlier entertainments differed from movies. The other answer choices are not mentioned in the paragraph.

6. A This is a Factual Information question asking for specific information that can be found in paragraph 5. The correct answer is choice A, "They decided how to combine various components of the film program," because that idea is stated explicitly in the paragraph:

"Early exhibitors shaped their film programs by mixing films and other entertainments together."

The other choices, while possibly true, are not explicitly mentioned in the paragraph as being among the exhibitors' roles.

- 7. **B** This is a Reference question. The word being tested is *It*. That word is highlighted in the passage. Choice B, "the viewer's relationship with the image," is the correct answer. This is a simple pronoun-referent item. The sentence says that "It" suddenly became "public," which implies that whatever "It" is, it was formerly private. The paragraph says that "the viewer's relationship with the image was no longer private," so that relationship is the "It" referred to here.
- 8. A This is a Factual Information question asking for specific information that can be found in paragraph 6. The correct answer is choice A. The paragraph says that the images expanded from an inch or two to life-size proportions, so "small in size" must be correct. The paragraph does not mention the other choices.
- 9. This is an Insert Text question. You can see the four possible answer choices in paragraph 3.

(A) Exhibitors, however, wanted to maximize their profits, which they could do more readily by projecting a handful of films to hundreds of customers at a time (rather than one at a time) and by charging 25 to 50 cents admission. (B) About a year after the opening of the first Kinetoscope parlor in 1894, showmen such as Louis and Auguste Lumière, Thomas Armat and Charles Francis Jenkins, and Orville and Woodville Latham (with the assistance of Edison's former assistant, William Dickson) perfected projection devices. (C) These early projection devices were used in vaudeville theaters, legitimate theaters, local town halls, makeshift storefront theaters, fairgrounds, and amusement parks to show films to a mass audience. (D)

The inserted sentence fits best at choice **(D)** because it represents the final result of the general use of projectors. After projectors became popular, Edison lost money, and although he had previously refused to develop projection technology, now he was forced to do so. To place the sentence anyplace else would interrupt the logical narrative sequence of the events described. None of the sentences in this paragraph can logically follow the inserted sentence, so choices **(A)**, **(B)**, and **(C)** are all incorrect.

Directions: An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the THREE answer choices that express the most important ideas in the passage. Some answer choices do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage. **This question is worth 2 points.**

The technology for modern cinema evolved at the end of the nineteenth century.

- **C** Early cinema allowed individuals to use special machines to view films privately.
- The development of projection technology made it possible to project images on a large screen.
- Once film images could be projected, the cinema became a form of mass consumption.

- A Kinetoscope parlors for viewing films were modeled on phonograph parlors.
- B Thomas Edison's design of the Kinetoscope inspired the development of large-screen projection.
- C Early cinema allowed individuals to use special machines to view films privately.
- D Slide-and-lantern shows had been presented to audiences of hundreds of spectators.
- E The development of projection technology made it possible to project images on a large screen.
- F Once film images could be projected, the cinema became a form of mass consumption.

Correct Choices

- Choice C, "Early cinema allowed individuals to use special machines to view films privately," is correct because it represents one of the chief differences between Kinetoscope and projection viewing. This idea is discussed at several places in the passage. It is mentioned in paragraphs 1, 3, 4, and 6. Thus it is a basic, recurring theme of the passage and, as such, a "major idea."
- *Choice E*, "The development of projection technology made it possible to project images on a large screen," is correct because this is a major idea that is treated in paragraphs 3, 4, 5, and 6. This development was essentially the reason that the cinema did "emerge as a form of mass consumption."
- *Choice F*, "Once film images could be projected, the cinema became a form of mass consumption," is correct because it represents the primary theme of the passage. It is explicitly stated in the passage's opening sentence; then the remainder of the passage describes that evolution.

Incorrect Choices

- *Choice A*, "Kinetoscope parlors for viewing films were modeled on phonograph parlors," is incorrect because, while true, it is a minor detail. The Kinetoscope parlors are described in paragraph 2, but the fact that they were modeled on phonograph parlors is not central to the "evolution" of cinema.
- Choice B, "Thomas Edison's design of the Kinetoscope inspired the development of large-screen projection," is incorrect because it is not clear that it is true, based on the passage. While it may be inferred from paragraph 3 that the Kinetoscope inspired the development of large-screen projection, it seems more likely that the pursuit of greater profits is what really inspired large-screen-projection development. Since this answer is not clearly supported in the passage, it cannot be considered a "main idea" and is incorrect.
- *Choice D*, "Slide-and-lantern shows had been presented to audiences of hundreds of spectators," is incorrect because it is a minor detail, mentioned only once in paragraph 4 as part of a larger list of theatrical spectacles.

PRACTICE SET 4

AGGRESSION

When one animal attacks another, it engages in the most obvious example of aggressive behavior. Psychologists have adopted several approaches to understanding aggressive behavior in people.

The Biological Approach. Numerous biological structures and chemicals appear to be involved in aggression. One is the hypothalamus, a region of the brain. In response to certain stimuli, many animals show instinctive aggressive reactions. The hypothalamus appears to be involved in this inborn reaction pattern: electrical stimulation of part of the hypothalamus triggers stereotypical aggressive behaviors in many animals. In people, however, whose brains are more complex, other brain structures apparently moderate possible instincts.

An offshoot of the biological approach called *sociobiology* suggests that aggression is natural and even desirable for people. Sociobiology views much social behavior, including aggressive behavior, as genetically determined. Consider Darwin's theory of evolution. Darwin held that many more individuals are produced than can find food and survive into adulthood. A struggle for survival follows. Those individuals who possess characteristics that provide them with an advantage in the struggle for existence are more likely to survive and contribute their genes to the next generation. In many species, such characteristics include aggressiveness. Because aggressive individuals are more likely to survive and reproduce, whatever genes are linked to aggressive behavior are more likely to be transmitted to subsequent generations.

The sociobiological view has been attacked on numerous grounds. One is that people's capacity to outwit other species, not their aggressiveness, appears to be the dominant factor in human survival. Another is that there is too much variation among people to believe that they are dominated by, or at the mercy of, aggressive impulses.

The Psychodynamic Approach. Theorists adopting the psychodynamic approach hold that inner conflicts are crucial for understanding human behavior, including aggression. Sigmund Freud, for example, believed that aggressive impulses are inevitable reactions to the frustrations of daily life. Children normally desire to vent aggressive impulses on other people, including their parents, because even the most attentive parents cannot gratify all of their demands immediately. Yet children, also fearing their parents' punishment and the loss of parental love, come to repress most aggressive impulses. The Freudian perspective, in a sense, sees us as "steam engines." By holding in rather than venting "steam," we set the stage for future explosions. Pent-up aggressive impulses demand outlets. They may be expressed toward parents in indirect ways such as destroying furniture, or they may be expressed toward strangers later in life.

According to psychodynamic theory, the best ways to prevent harmful aggression may be to encourage less harmful aggression. In the steam-engine analogy, verbal aggression may vent some of the aggressive steam. So might cheering on one's favorite sports team. Psychoanalysts, therapists adopting a psychodynamic approach, refer to the venting of aggressive impulses as "catharsis." Catharsis is theorized to be a safety valve. But research findings on the usefulness of catharsis are mixed. Some studies suggest that catharsis leads

to reductions in tension and a lowered likelihood of future aggression. Other studies, however, suggest that letting some steam escape actually encourages more aggression later on.

The Cognitive Approach. Cognitive psychologists assert that our behavior is influenced by our values, by the ways in which we interpret our situations, and by choice. For example, people who believe that aggression is necessary and justified—as during wartime—are likely to act aggressively, whereas people who believe that a particular war or act of aggression is unjust, or who think that aggression is never justified, are less likely to behave aggressively.

One cognitive theory suggests that aggravating and painful events trigger unpleasant feelings. These feelings, in turn, can lead to aggressive action, but *not* automatically. Cognitive factors intervene. People *decide* whether they will act aggressively or not on the basis of factors such as their experiences with aggression and their interpretation of other people's motives. Supporting evidence comes from research showing that aggressive people often distort other people's motives. For example, they assume that other people mean them harm when they do not.

1. Catharsis: In psychodynamic theory, the purging of strong emotions or the relieving of tensions

Directions: Now answer the questions.

An offshoot of the biological approach called *sociobiology* suggests that aggression is natural and even desirable for people. Sociobiology views much social behavior, including aggressive behavior, as genetically determined. Consider Darwin's theory of evolution. Darwin held that many more individuals are produced than can find food and survive into adulthood. A struggle for survival follows. Those individuals who possess characteristics that provide them with an advantage in the struggle for existence are more likely to survive and contribute their genes to the next generation. In many species, such characteristics include aggressiveness. Because aggressive individuals are more likely to survive and reproduce, whatever genes are linked to aggressive behavior are more likely to be transmitted to subsequent generations.

- 1. According to Darwin's theory of evolution, members of a species are forced to struggle for survival because
 - (A) not all individuals are skilled in finding food
 - B individuals try to defend their young against attackers
 - (C) many more individuals are born than can survive until the age of reproduction
 - (D) individuals with certain genes are more likely to reach adulthood

The Psychodynamic Approach. Theorists adopting the psychodynamic approach hold that inner conflicts are crucial for understanding human behavior, including aggression. Sigmund Freud, for example, believed that aggressive impulses are inevitable reactions to the frustrations of daily life. Children normally desire to vent aggressive impulses on other people, including their parents, because even the most attentive parents cannot gratify all of their demands immediately. Yet children, also fearing their parents' punishment and the loss of parental love, come to repress most aggressive impulses. The Freudian perspective, in a sense, sees us as "steam engines." By holding in rather than venting "steam," we set the stage for future explosions. Pent-up aggressive impulses demand outlets. They may be expressed toward parents in indirect ways such as destroying furniture, or they may be expressed toward strangers later in life.

- 2. The word "gratify" in the passage is closest in meaning to
 - (A) identify
 - **B** modify
 - © satisfy
 - simplify
- 3. The word "they" in the passage refers to
 - (A) future explosions
 - **B** pent-up aggressive impulses
 - © outlets
 - (D) indirect ways

- 4. According to paragraph 5, Freud believed that children experience conflict between a desire to vent aggression on their parents and
 - a frustration that their parents do not give them everything they want
 - B a fear that their parents will punish them and stop loving them
 - © a desire to take care of their parents
 - a desire to vent aggression on other family members
- 5. Freud describes people as "steam engines" in order to make the point that people
 - deliberately build up their aggression to make themselves stronger
 - B usually release aggression in explosive ways
 - must vent their aggression to prevent it from building up
 - typically lose their aggression if they do not express it

The Cognitive Approach. Cognitive psychologists assert that our behavior is influenced by our values, by the ways in which we interpret our situations, and by choice. For example, people who believe that aggression is necessary and justified—as during wartime—are likely to act aggressively, whereas people who believe that a particular war or act of aggression is unjust, or who think that aggression is never justified, are less likely to behave aggressively.

One cognitive theory suggests that aggravating and painful events trigger unpleasant feelings. These feelings, in turn, can lead to aggressive action, but *not* automatically. Cognitive factors intervene. People *decide* whether they will act aggressively or not on the basis of factors such as their experiences with aggression and their interpretation of other people's motives. Supporting evidence comes from research showing that aggressive people often distort other people's motives. For example, they assume that other people mean them harm when they do not.

- 6. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect answer choices change the meaning in important ways or leave out essential information.
 - A People who believe that they are fighting a just war act aggressively while those who believe that they are fighting an unjust war do not.
 - People who believe that aggression is necessary and justified are more likely to act aggressively than those who believe differently.
 - © People who normally do not believe that aggression is necessary and justified may act aggressively during wartime.
 - People who believe that aggression is necessary and justified do not necessarily act aggressively during wartime.

- 7. According to the cognitive approach described in paragraphs 7 and 8, all of the following may influence the decision whether to act aggressively EXCEPT a person's
 - (A) moral values
 - B previous experiences with aggression
 - (C) instinct to avoid aggression
 - beliefs about other people's intentions

The Psychodynamic Approach. Theorists adopting the psychodynamic approach hold that inner conflicts are crucial for understanding human behavior, including aggression. Sigmund Freud, for example, believed that aggressive impulses are inevitable reactions to the frustrations of daily life. Children normally desire to vent aggressive impulses on other people, including their parents, because even the most attentive parents cannot gratify all of their demands immediately. (A) Yet children, also fearing their parents' punishment and the loss of parental love, come to repress most aggressive impulses. (B) The Freudian perspective, in a sense, sees us as "steam engines." (C) By holding in rather than venting "steam," we set the stage for future explosions. (D) Pent-up aggressive impulses demand outlets. They may be expressed toward parents in indirect ways such as destroying furniture, or they may be expressed toward strangers later in life.

8. **Directions:** Look at the part of the passage that is displayed above. The letters (A), (B), (C), and (D) indicate where the following sentence could be added.

According to Freud, however, impulses that have been repressed continue to exist and demand expression.

Where would the sentence best fit?

- (A) Choice A
- (B) Choice B
- C Choice C
- ① Choice D
- 9. **Directions:** Complete the table below by matching five of the six answer choices with the approach to aggression that they exemplify. **This question is worth 3 points.**

Approach to Understanding Aggression	Associated Claims
Biological Approach	•
Psychodynamic Approach	•
	•
Cognitive Approach	•
	•

- A Aggressive impulses toward people are sometimes expressed in indirect ways.
- B Aggressiveness is often useful for individuals in the struggle for survival.
- C Aggressive behavior may involve a misunderstanding of other people's intentions.
- D The need to express aggressive impulses declines with age.
- E Acting aggressively is the result of a choice influenced by a person's values and beliefs.
- F Repressing aggressive impulses can result in aggressive behavior.

PRACTICE SET 4 ANSWERS AND EXPLANATIONS

- 1. This is a Factual Information question asking for specific information that can be found in the passage. The correct answer is choice C, "many more individuals are born than can survive until the age of reproduction." This answer choice is essentially a paraphrase of paragraph 3, sentence 4: "Darwin held that many more individuals are produced than can find food and survive into adulthood." Choices A and B are not mentioned at all. Choice D may be true, but it is not stated in the passage as a fact; an inference is needed to support it.
- 2. This is a Vocabulary question. The word being tested is *gratify*. It is highlighted in the passage. The correct answer is choice C, "satisfy." If a person's desires are gratified, those desires are fulfilled. Thus the person is satisfied.
- 3. **B** This is a Reference question. The word being tested is *they*. It is highlighted in the passage. The correct answer is choice B, "pent-up aggressive impulses." This is a simple pronoun-referent item. The word *they* here refers to something that "may be expressed toward strangers later in life." This is the "outlet" toward which the "aggressive impulses" mentioned may be directed.
- 4. B This is a Factual Information question asking for specific information that can be found in paragraph 5. The correct answer is choice B, "a fear that their parents will punish them and stop loving them." The question asks what causes the conflict between the desire to vent aggression and children's fears. The answer is found in paragraph 5 in the sentence that reads, "Yet children, also fearing their parents' punishment and the loss of parental love, come to repress most aggressive impulses." Answer choice B is the only choice that correctly identifies the cause of the conflict created by repressing aggression in children.
- 5. This is a Rhetorical Purpose question. It asks you why the author mentions that Freud described people as "steam engines" in the passage. The phrase being tested is highlighted in the passage. The correct answer is choice C, "must vent their aggression to prevent it from building up." Steam engines will explode if their steam builds up indefinitely. The same is true of people, as choice C indicates. The other choices are not necessarily true of both people and steam engines, so they are incorrect.
- 6. B This is a Sentence Simplification question. As with all of these questions, a single sentence in the passage is highlighted:

For example, people who believe that aggression is necessary and justified—as during wartime—are likely to act aggressively, whereas people who believe that a particular war or act of aggression is unjust, or who think that aggression is never justified, are less likely to behave aggressively.

The correct answer is choice B. It contains all of the essential information in the highlighted sentence. The highlighted sentence compares people who believe particular acts of aggression are necessary and those who do not, in terms of their relative likelihood to act aggressively under certain conditions. This is precisely what choice B says: "People who believe that aggression is necessary and justified are more likely to act aggressively than those who believe differently." It compares the behavior of one type of person with that of another type of person. Nothing essential has been left out, and the meaning has not been changed.

Choice A changes the meaning of the sentence; it says categorically that "those [people] who believe that they are fighting an unjust war do not [act aggressively]." The highlighted sentence merely says that such people are "less likely" to act aggressively, not that they never will; this changes the meaning.

Choice C says, "People who normally do not believe that aggression is necessary and justified may act aggressively during wartime." This is incorrect because it leaves out critical information: it does not mention people who do believe aggression is necessary. This choice does not make the same comparison as the highlighted sentence.

Choice D, "People who believe that aggression is necessary and justified do not necessarily act aggressively during wartime," also changes the meaning of the sentence by leaving out essential information. In this choice, no mention is made of people who do not believe aggression is necessary. This choice does not make the same comparison as the highlighted sentence.

7. This is a Negative Factual Information question asking for specific information that can be found in paragraphs 7 and 8. Choice C is the correct answer.

Choice A, "moral values," is explicitly mentioned as one of the influences on aggressive behavior, so it is incorrect. Choices B ("previous experiences") and D ("beliefs about other people") are both explicitly mentioned in this context. The sentence in paragraph 8 says, "People decide whether they will act aggressively or not on the basis of factors such as their experiences with aggression and their interpretation of other people's motives." Choice C, the "instinct to avoid aggression," is not mentioned, so it is the correct answer here.

8. B This is an Insert Text question. You can see the four possible answer choices in paragraph 5.

The Psychodynamic Approach. Theorists adopting the psychodynamic approach hold that inner conflicts are crucial for understanding human behavior, including aggression. Sigmund Freud, for example, believed that aggressive impulses are inevitable reactions to the frustrations of daily life. Children normally desire to vent aggressive impulses on other people, including their parents, because even the most attentive parents cannot gratify all of their demands immediately. (A) Yet children, also fearing their parents' punishment and the loss of parental love, come to repress most aggressive impulses. (B) The Freudian perspective, in a sense, sees us as "steam engines." (C) By holding in rather than venting "steam," we set the stage for future explosions. (D) Pent-up aggressive impulses demand outlets. They may be expressed toward parents in indirect ways such as destroying furniture, or they may be expressed toward strangers later in life.

The sentence provided, "According to Freud, however, impulses that have been repressed continue to exist and demand expression," is best inserted at choice (B).

Choice **(B)** is correct because the sentence being inserted is a connective sentence, connecting the idea of childhood repression in the preceding sentence to the "Freudian perspective" in the sentence that follows. The use of the word *however* in this sentence indicates that an idea already introduced (the repression of children's aggressive impulses) is being modified. Here, the inserted sentence tells us that Freud thought that even though these impulses are repressed, they continue to exist. This serves as a connection to the next sentence and the "Freudian perspective." Inserting the sentence at choice **(A)** would place the modification ("however, impulses . . . continue to exist") before the idea that it modifies (repression of impulses). This makes no logical sense. Inserting the sentence at choice **(C)** would move the modifying sentence away from its logical position immediately following the idea that it modifies (repression of impulses). Placing the insert sentence at choice **(D)** moves the sentence farther from its logical antecedent and with no connection to the sentence that follows it.

9. This is a Fill in a Table question. It is completed correctly below. Choice B is the correct answer for the "Biological Approach" row. Choices A and F are the correct answers for the "Psychodynamic Approach" row. Choices C and E are the correct answers for the "Cognitive Approach" row. Choice D should not be used in any row.

Directions: Complete the table below by matching five of the six answer choices with the approach to aggression that they exemplify. **This question is worth 3 points.**

Approach to Understanding Aggression	Associated Claims
Biological Approach	B Aggressiveness is often useful for
	individuals in the struggle for survival.
Psychodynamic Approach	A Aggressive impulses toward people are
	sometimes expressed in indirect ways.
	F Repressing aggressive impulses can
	result in aggressive behavior.
Cognitive Approach	C Aggressive behavior may involve a
	misunderstanding of other people's
	intentions.
	E Acting aggressively is the result of a
	choice influenced by a person's values
	and beliefs.

- Aggressive impulses toward people are sometimes expressed in indirect ways.
- B Aggressiveness is often useful for individuals in the struggle for survival.
- C Aggressive behavior may involve a misunderstanding of other people's intentions.
- D The need to express aggressive impulses declines with age.
- E Acting aggressively is the result of a choice influenced by a person's values and beliefs.
- F Repressing aggressive impulses can result in aggressive behavior.

Correct Choices

- Choice A: "Aggressive impulses toward people are sometimes expressed in indirect ways" belongs in the "Psychodynamic Approach" row based on paragraph 5. That paragraph, in explaining the psychodynamic approach, states, "Pent-up aggressive impulses demand outlets. They may be expressed toward parents in indirect ways such as destroying furniture . . ."
- Choice B: "Aggressiveness is often useful for individuals in the struggle for survival" belongs in the "Biological Approach" row because, as stated in paragraph 3, "An offshoot of the biological approach called *sociobiology* suggests that aggression is natural and even desirable for people." The remainder of that paragraph explains the ways in which aggressive behavior can be useful in the struggle for survival. Neither of the other approaches discusses this idea, so this answer choice belongs here.
- Choice C: "Aggressive behavior may involve a misunderstanding of other people's intentions" belongs in the "Cognitive Approach" row based on paragraph 8. The theme of that paragraph is that people decide to be aggressive (or not) largely based upon their interpretations of other people's motives. It goes on to say that these interpretations may be "distorted," or misunderstood. Accordingly, this answer choice belongs in this row.
- Choice E: "Acting aggressively is the result of a choice influenced by a person's values and beliefs" belongs in the "Cognitive Approach" row based on paragraph 7, which states, "Cognitive psychologists assert that our behavior is influenced by our values, by the ways in which we interpret our situations, and by choice." Thus this is an important aspect of the cognitive approach.
- *Choice F:* "Repressing aggressive impulses can result in aggressive behavior" belongs in the "Psychodynamic Approach" row based on paragraphs 5 and 6. Both of those paragraphs explicitly make this point in the section of the passage on the psychodynamic approach.

Incorrect Choice

Choice D: "The need to express aggressive impulses declines with age" is not mentioned in connection with any of the approaches to aggression discussed in the passage, so it should not be used.

PRACTICE SET 5

ARTISANS AND INDUSTRIALIZATION

Before 1815 manufacturing in the United States had been done in homes or shops by skilled artisans. As master craftworkers, they imparted the knowledge of their trades to apprentices and journeymen. In addition, women often worked in their homes part-time, making finished articles from raw material supplied by merchant capitalists. After 1815 this older form of manufacturing began to give way to factories with machinery tended by unskilled or semiskilled laborers. Cheap transportation networks, the rise of cities, and the availability of capital and credit all stimulated the shift to factory production.

The creation of a labor force that was accustomed to working in factories did not occur easily. Before the rise of the factory, artisans had worked within the home. Apprentices were considered part of the family, and masters were responsible not only for teaching their apprentices a trade but also for providing them some education and for supervising their moral behavior. Journeymen knew that if they perfected their skill, they could become respected master artisans with their own shops. Also, skilled artisans did not work by the clock, at a steady pace, but rather in bursts of intense labor alternating with more leisurely time.

The factory changed that. Goods produced by factories were not as finished or elegant as those done by hand, and pride in craftsmanship gave way to the pressure to increase rates of productivity. The new methods of doing business involved a new and stricter sense of time. Factory life necessitated a more regimented schedule, where work began at the sound of a bell and workers kept machines going at a constant pace. At the same time, workers were required to discard old habits, for industrialism demanded a worker who was alert, dependable, and self-disciplined. Absenteeism and lateness hurt productivity and, since work was specialized, disrupted the regular factory routine. Industrialization not only produced a fundamental change in the way work was organized; it transformed the very nature of work.

The first generation to experience these changes did not adopt the new attitudes easily. The factory clock became the symbol of the new work rules. One mill worker who finally quit complained revealingly about "obedience to the ding-dong of the bell—just as though we are so many living machines." With the loss of personal freedom also came the loss of standing in the community. Unlike artisan workshops in which apprentices worked closely with the masters supervising them, factories sharply separated workers from management. Few workers rose through the ranks to supervisory positions, and even fewer could achieve the artisan's dream of setting up one's own business. Even well-paid workers sensed their decline in status.

In this newly emerging economic order, workers sometimes organized to protect their rights and traditional ways of life. Craftworkers such as carpenters, printers, and tailors formed unions, and in 1834 individual unions came together in the National Trades' Union. The labor movement gathered some momentum in the decade before the Panic of 1837, but in the depression that followed, labor's strength collapsed. During hard times, few workers were willing to strike¹ or engage in collective action. And skilled craftworkers, who spearheaded the union movement, did not feel a particularly strong bond with semiskilled factory workers and unskilled laborers. More than a decade of agitation did finally bring a

workday shortened to 10 hours to most industries by the 1850s, and the courts also recognized workers' right to strike, but these gains had little immediate impact.

Workers were united in resenting the industrial system and their loss of status, but they were divided by ethnic and racial antagonisms, gender, conflicting religious perspectives, occupational differences, political party loyalties, and disagreements over tactics. For them, the factory and industrialism were not agents of opportunity but reminders of their loss of independence and a measure of control over their lives. As United States society became more specialized and differentiated, greater extremes of wealth began to appear. And as the new markets created fortunes for the few, the factory system lowered the wages of workers by dividing labor into smaller, less skilled tasks.

1. Strike: A stopping of work that is organized by workers

Directions: Now answer the questions.

- 1. Which of the following can be inferred from the passage about articles manufactured before 1815?
 - (A) They were primarily produced by women.
 - (B) They were generally produced in shops rather than in homes.
 - They were produced with more concern for quality than for speed of production.
 - ① They were produced mostly in large cities with extensive transportation networks.

The creation of a labor force that was accustomed to working in factories did not occur easily. Before the rise of the factory, artisans had worked within the home. Apprentices were considered part of the family, and masters were responsible not only for teaching their apprentices a trade but also for providing them some education and for supervising their moral behavior. Journeymen knew that if they perfected their skill, they could become respected master artisans with their own shops. Also, skilled artisans did not work by the clock, at a steady pace, but rather in bursts of intense labor alternating with more leisurely time.

- 2. Which of the sentences below best expresses the essential information in the high-lighted sentence in the passage? Incorrect answer choices change the meaning in important ways or leave out essential information.
 - (A) Masters demanded moral behavior from apprentices but often treated them irresponsibly.
 - B The responsibilities of the master to the apprentice went beyond the teaching of a trade.
 - © Masters preferred to maintain the trade within the family by supervising and educating the younger family members.
 - Masters who trained members of their own family as apprentices demanded excellence from them.

The factory changed that. Goods produced by factories were not as finished or elegant as those done by hand, and pride in craftsmanship gave way to the pressure to increase rates of productivity. The new methods of doing business involved a new and stricter sense of time. Factory life necessitated a more regimented schedule, where work began at the sound of a bell and workers kept machines going at a constant pace. At the same time, workers were required to discard old habits, for industrialism demanded a worker who was alert, dependable, and self-disciplined. Absenteeism and lateness hurt productivity and, since work was specialized, disrupted the regular factory routine. Industrialization not only produced a fundamental change in the way work was organized; it transformed the very nature of work.

- 3. The word "disrupted" in the passage is closest in meaning to
 - (A) prolonged
 - (B) established
 - (C) followed
 - (D) upset

The first generation to experience these changes did not adopt the new attitudes easily. The factory clock became the symbol of the new work rules. One mill worker who finally quit complained revealingly about "obedience to the ding-dong of the bell—just as though we are so many living machines." With the loss of personal freedom also came the loss of standing in the community. Unlike artisan workshops in which apprentices worked closely with the masters supervising them, factories sharply separated workers from management. Few workers rose through the ranks to supervisory positions, and even fewer could achieve the artisan's dream of setting up one's own business. Even well-paid workers sensed their decline in status.

- 4. In paragraph 4, the author includes the quotation from a mill worker in order to
 - (A) support the idea that it was difficult for workers to adjust to working in factories
 - B show that workers sometimes quit because of the loud noise made by factory machinery
 - argue that clocks did not have a useful function in factories
 - emphasize that factories were most successful when workers revealed their complaints

- All of the following are mentioned in paragraph 4 as consequences of the new system for workers EXCEPT a loss of
 - (A) freedom
 - **B** status in the community
 - © opportunities for advancement
 - contact among workers who were not managers

In this newly emerging economic order, workers sometimes organized to protect their rights and traditional ways of life. Craftworkers such as carpenters, printers, and tailors formed unions, and in 1834 individual unions came together in the National Trades' Union. The labor movement gathered some momentum in the decade before the Panic of 1837, but in the depression that followed, labor's strength collapsed. During hard times, few workers were willing to strike or engage in collective action. And skilled craftworkers, who spearheaded the union movement, did not feel a particularly strong bond with semiskilled factory workers and unskilled laborers. More than a decade of agitation did finally bring a workday shortened to 10 hours to most industries by the 1850s, and the courts also recognized workers' right to strike, but these gains had little immediate impact.

- 6. Which of the following statements about the labor movement of the 1800s is supported by paragraph 5?
 - (A) It was successful during times of economic crisis.
 - **B** Its primary purpose was to benefit unskilled laborers
 - (C) It was slow to improve conditions for workers.
 - ① It helped workers of all skill levels form a strong bond with each other.

Workers were united in resenting the industrial system and their loss of status, but they were divided by ethnic and racial antagonisms, gender, conflicting religious perspectives, occupational differences, political party loyalties, and disagreements over tactics. For them, the factory and industrialism were not agents of opportunity but reminders of their loss of independence and a measure of control over their lives. As United States society became more specialized and differentiated, greater extremes of wealth began to appear. And as the new markets created fortunes for the few, the factory system lowered the wages of workers by dividing labor into smaller, less skilled tasks.

- 7. The author identifies "political party loyalties" and "disagreements over tactics" as two of several factors that
 - (A) encouraged workers to demand higher wages
 - (B) created divisions among workers
 - © caused work to become more specialized
 - (D) increased workers' resentment of the industrial system

Before 1815 manufacturing in the United States had been done in homes or shops by skilled artisans. (A) As master craftworkers, they imparted the knowledge of their trades to apprentices and journeymen. (B) In addition, women often worked in their homes part-time, making finished articles from raw material supplied by merchant capitalists. (C) After 1815 this older form of manufacturing began to give way to factories with machinery tended by unskilled or semiskilled laborers. (D) Cheap transportation networks, the rise of cities, and the availability of capital and credit all stimulated the shift to factory production.

8. **Directions:** Look at the part of the passage that is displayed above. The letters (A), (B), (C), and (D) indicate where the following sentence could be added.

This new form of manufacturing depended on the movement of goods to distant locations and a centralized source of laborers.

Where would the sentence best fit?

- (A) Choice A
- (B) Choice B
- C Choice C
- (D) Choice D
- 9. **Directions:** Complete the table below by indicating which of the answer choices describe characteristics of the period before 1815 and which describe characteristics of the 1815–1850 period. **This question is worth 3 points.**

Before 1815	1815–1850	
•	•	
•	•	
	•	

- A united, highly successful labor movement took shape.
- B Workers took pride in their workmanship.
- C The income gap between the rich and the poor increased greatly.
- D Transportation networks began to decline.
- E Emphasis was placed on following schedules.
- F Workers went through an extensive period of training.
- G Few workers expected to own their own businesses.

PRACTICE SET 5 ANSWERS AND EXPLANATIONS

1. C This is an Inference question asking for an inference that can be supported by the passage. The correct answer is choice C, "They were produced with more concern for quality than for speed of production."

A number of statements throughout the passage support choice C. Paragraph 1 states, "Before 1815 manufacturing in the United States had been done in homes or shops by skilled artisans . . . After 1815 this older form of manufacturing began to give way to factories with machinery tended by unskilled or semiskilled laborers."

Paragraph 2 states, "Before the rise of the factory . . . skilled artisans did not work by the clock, at a steady pace, but rather in bursts of intense labor alternating with more leisurely time."

Paragraph 3 states, "The factory changed that. Goods produced by factories were not as finished or elegant as those done by hand, and pride in craftsmanship gave way to the pressure to increase rates of productivity."

Taken together, these three statements, about production rates, the rise of factories after 1815, and the decline of craftsmanship after 1815, support the inference that before 1815, the emphasis had been on quality rather than on speed of production. Answer choices A, B, and D are all contradicted by the passage.

2. **B** This is a Sentence Simplification question. As with all of these questions, a single sentence in the passage is highlighted:

Apprentices were considered part of the family, and masters were responsible not only for teaching their apprentices a trade but also for providing them some education and for supervising their moral behavior.

The correct answer is choice B. Choice B contains all of the essential information in the highlighted sentence. The highlighted sentence explains why (part of the family) and how (education, moral behavior) a master's responsibility went beyond teaching a trade. The essential information is the fact that the master's responsibility went beyond teaching a trade. Therefore choice B contains all that is essential without changing the meaning of the highlighted sentence.

Choice A changes the meaning of the highlighted sentence by stating that masters often treated apprentices irresponsibly.

Choice C contradicts the essential meaning of the highlighted sentence. The fact that "Apprentices were considered part of the family" suggests that they were not actual family members.

Choice D, like choice C, changes the meaning of the highlighted sentence by discussing family members as apprentices.

3. This is a Vocabulary question. The word being tested is *disrupted*. It is highlighted in the passage. The correct answer is choice D, "upset." The word *upset* here is used in the context of "hurting productivity." When something is hurt or damaged, it is "upset."

- 4. A This is a Factual Information question asking for specific information that can be found in paragraph 4. The correct answer is choice A, "support the idea that it was difficult for workers to adjust to working in factories." The paragraph begins by stating that workers did not adopt new attitudes toward work easily and that the clock symbolized the new work rules. The author provides the quotation as evidence of that difficulty. There is no indication in the paragraph that workers quit due to loud noise, so choice B is incorrect. Choice C (usefulness of clocks) is contradicted by the paragraph. The factory clock was "useful," but workers hated it. Choice D (workers' complaints as a cause of a factory's success) is not discussed in this paragraph.
- 5. This is a Negative Factual Information question asking for specific information that can be found in paragraph 4. Choice D, "contact among workers who were not managers," is the correct answer. The paragraph explicitly contradicts this by stating that "factories sharply separated workers from management." The paragraph explicitly states that workers lost choice A (freedom), choice B (status in the community), and choice C (opportunities for advancement) in the new system, so those choices are all incorrect.
- 6. This is a Factual Information question asking for specific information that can be found in paragraph 5. The correct answer is choice C, "It was slow to improve conditions for workers." The paragraph states, "More than a decade of agitation did finally bring a workday shortened to 10 hours to most industries by the 1850s, and the courts also recognized workers' right to strike, but these gains had little immediate impact." This statement explicitly supports choice C. All three other choices are contradicted by the paragraph.
- 7. B This is a Factual Information question asking for specific information about a particular phrase in the passage. The phrase in question is highlighted in the passage. The correct answer is choice B, "created divisions among workers." The paragraph states, "they (workers) were divided by ethnic and racial antagonisms, gender, conflicting religious perspectives, occupational differences, political party loyalties, and disagreements over tactics." So "political party loyalties" and "disagreements over tactics" are explicitly stated as two causes of division among workers. The other choices are not stated and are incorrect.
- 8. This is an Insert Text question. You can see the four possible answer choices in paragraph 1.

Before 1815 manufacturing in the United States had been done in homes or shops by skilled artisans. (A) As master craftworkers, they imparted the knowledge of their trades to apprentices and journeymen. (B) In addition, women often worked in their homes part-time, making finished articles from raw material supplied by merchant capitalists. (C) After 1815 this older form of manufacturing began to give way to factories with machinery tended by unskilled or semiskilled laborers. (D) Cheap transportation networks, the rise of cities, and the availability of capital and credit all stimulated the shift to factory production.

The sentence provided, "This new form of manufacturing depended on the movement of goods to distant locations and a centralized source of laborers," is best inserted at choice (D). The inserted sentence refers explicitly to a "new form of manufacturing." This "new form of manufacturing" is the one mentioned in the sentence preceding choice (D), "factories with machinery tended by unskilled or semiskilled laborers." The inserted sentence then explains that this new system "depended on the movement of goods to distant locations and a centralized source of laborers." The sentence that follows choice (D) goes on to say, "Cheap transportation networks, the rise of cities, and the availability of capital and credit all stimulated the shift to factory production." Thus the inserted sentence contains references to both the sentence before choice (D) and the sentence after choice (D). This is not true of any of the other possible insert points, so choice (D) is the correct answer.

9. This is a Fill in a Table question. It is completed correctly below. The correct choices for the "Before 1815" column are B and F. Choices C, E, and G belong in the "1815–1850" column. Choices A and D should not be used in either column.

Directions: Complete the table below by indicating which of the answer choices describe characteristics of the period before 1815 and which describe characteristics of the 1815–1850 period. **This question is worth 3 points.**

Before 1815	1815–1850
B Workers took pride in their workmanship.F Workers went through an extensive period of training.	 C The income gap between the rich and the poor increased greatly. E Emphasis was placed on following schedules. G Few workers expected to own their own businesses.

- A united, highly successful labor movement took shape.
- B Workers took pride in their workmanship.
- The income gap between the rich and the poor increased greatly.
- D Transportation networks began to decline.
- E Emphasis was placed on following schedules.
- F Workers went through an extensive period of training.
- G Few workers expected to own their own businesses.

Correct Choices

- *Choice B:* "Workers took pride in their workmanship" belongs in the "Before 1815" column because it is mentioned in the passage as one of the characteristics of labor before 1815.
- Choice C: "The income gap between the rich and the poor increased greatly" belongs in the "1815–1850" column because it is mentioned in the passage as one of the characteristics of society that emerged in the period between 1815 and 1850.
- Choice E: "Emphasis was placed on following schedules" belongs in the "1815–1850" column because it is mentioned in the passage as one of the characteristics of labor in the factory system that emerged between 1815 and 1850.
- *Choice F:* "Workers went through an extensive period of training" belongs in the "Before 1815" column because it is mentioned in the passage as one of the characteristics of labor before 1815.
- Choice G: "Few workers expected to own their own businesses" belongs in the "1815–1850" column because it is mentioned in the passage as one of the characteristics of society that emerged in the period between 1815 and 1850.

Incorrect Choices

- *Choice A:* "A united, highly successful labor movement took shape" does not belong in the table because it contradicts the passage.
- *Choice D:* "Transportation networks began to decline" does not belong in the table because it is not mentioned in the passage in connection with either the period before 1815 or the period between 1815 and 1850.

PRACTICE SET 6

SWIMMING MACHINES

Tunas, mackerels, and billfishes (marlins, sailfishes, and swordfish) swim continuously. Feeding, courtship, reproduction, and even "rest" are carried out while in constant motion. As a result, practically every aspect of the body form and function of these swimming "machines" is adapted to enhance their ability to swim.

Many of the adaptations of these fishes serve to reduce water resistance (drag). Interestingly enough, several of these hydrodynamic adaptations resemble features designed to improve the aerodynamics of high-speed aircraft. Though human engineers are new to the game, tunas and their relatives evolved their "high-tech" designs long ago.

Tunas, mackerels, and billfishes have made streamlining into an art form. Their bodies are sleek and compact. The body shapes of tunas, in fact, are nearly ideal from an engineering point of view. Most species lack scales over most of the body, making it smooth and slippery. The eyes lie flush with the body and do not protrude at all. They are also covered with a slick, transparent lid that reduces drag. The fins are stiff, smooth, and narrow, qualities that also help cut drag. When not in use, the fins are tucked into special grooves or depressions so that they lie flush with the body and do not break up its smooth contours. Airplanes retract their landing gear while in flight for the same reason.

Tunas, mackerels, and billfishes have even more sophisticated adaptations than these to improve their hydrodynamics. The long bill of marlins, sailfishes, and swordfish probably helps them slip through the water. Many supersonic aircraft have a similar needle at the nose.

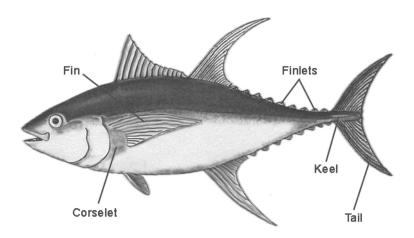
Most tunas and billfishes have a series of keels and finlets near the tail. Although most of their scales have been lost, tunas and mackerels retain a patch of coarse scales near the head called the corselet. The keels, finlets, and corselet help direct the flow of water over the body surface in such a way as to reduce resistance (see the figure). Again, supersonic jets have similar features.

Because they are always swimming, tunas simply have to open their mouths and water is forced in and over their gills. Accordingly, they have lost most of the muscles that other fishes use to suck in water and push it past the gills. In fact, tunas must swim to breathe. They must also keep swimming to keep from sinking, since most have largely or completely lost the swim bladder, the gas-filled sac that helps most other fish remain buoyant.

One potential problem is that opening the mouth to breathe detracts from the streamlining of these fishes and tends to slow them down. Some species of tuna have specialized grooves in their tongue. It is thought that these grooves help to channel water through the mouth and out the gill slits, thereby reducing water resistance.

There are adaptations that increase the amount of forward thrust as well as those that reduce drag. Again, these fishes are the envy of engineers. Their high, narrow tails with swept-back tips are almost perfectly adapted to provide propulsion with the least possible effort. Perhaps most important of all to these and other fast swimmers is their ability to sense and make use of swirls and eddies (circular currents) in the water. They can glide past eddies that would slow them down and then gain extra thrust by "pushing off" the eddies. Scientists and engineers are beginning to study this ability of fishes in the hope of designing more efficient propulsion systems for ships.

The muscles of these fishes and the mechanism that maintains a warm body temperature are also highly efficient. A bluefin tuna in water of 7°C (45°F) can maintain a core temperature of over 25°C (77°F). This warm body temperature may help not only the muscles to work better, but also the brain and the eyes. The billfishes have gone one step further. They have evolved special "heaters" of modified muscle tissue that warm the eyes and brain, maintaining peak performance of these critical organs.



Directions: Now answer the questions.

Tunas, mackerels, and billfishes (marlins, sailfishes, and swordfish) swim continuously. Feeding, courtship, reproduction, and even "rest" are carried out while in constant motion. As a result, practically every aspect of the body form and function of these swimming "machines" is adapted to enhance their ability to swim.

- 1. The word "enhance" in the passage is closest in meaning to
 - (A) use
 - (B) improve
 - (C) counteract
 - (D) balance

PARAGRAPH

Tunas, mackerels, and billfishes have made streamlining into an art form. Their bodies are sleek and compact. The body shapes of tunas, in fact, are nearly ideal from an engineering point of view. Most species lack scales over most of the body, making it smooth and slippery. The eyes lie flush with the body and do not protrude at all. They are also covered with a slick, transparent lid that reduces drag. The fins are stiff, smooth, and narrow, qualities that also help cut drag. When not in use, the fins are tucked into special grooves or depressions so that they lie flush with the body and do not break up its smooth contours. Airplanes retract their landing gear while in flight for the same reason.

- 2. Why does the author mention that "Airplanes retract their landing gear while in flight"?
 - (A) To show that air resistance and water resistance work differently from each other
 - **B** To argue that some fishes are better designed than airplanes are
 - © To provide evidence that airplane engineers have studied the design of fish bodies
 - ① To demonstrate a similarity in design between certain fishes and airplanes

Tunas, mackerels, and billfishes have even more sophisticated adaptations than these to improve their hydrodynamics. The long bill of marlins, sailfishes, and swordfish probably helps them slip through the water. Many supersonic aircraft have a similar needle at the nose.

- 3. According to paragraph 4, the long bills of marlins, sailfish, and swordfish probably help these fishes by
 - (A) increasing their ability to defend themselves
 - (B) allowing them to change direction easily
 - (C) increasing their ability to detect odors
 - ① reducing water resistance as they swim

Because they are always swimming, tunas simply have to open their mouths and water is forced in and over their gills. Accordingly, they have lost most of the muscles that other fishes use to suck in water and push it past the gills. In fact, tunas must swim to breathe. They must also keep swimming to keep from sinking, since most have largely or completely lost the swim bladder, the gas-filled sac that helps most other fish remain buoyant.

- 4. According to the passage, which of the following is one of the reasons that tunas are in constant motion?
 - (A) They lack a swim bladder.
 - B They need to suck in more water than other fishes do.
 - They have large muscles for breathing.
 - ① They cannot open their mouths unless they are in motion.

PARAGRAPH

One potential problem is that opening the mouth to breathe detracts from the streamlining of these fishes and tends to slow them down. Some species of tuna have specialized grooves in their tongue. It is thought that these grooves help to channel water through the mouth and out the gill slits, thereby reducing water resistance.

- 5. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect answer choices change the meaning in important ways or leave out essential information.
 - (A) These fishes often have a problem opening their mouths while swimming.
 - **B** The streamlining of these fishes prevents them from slowing down.
 - (C) The streamlining of these fishes tends to slow down their breathing.
 - ① Opening the mouth to breathe can reduce the speed of these fishes.

There are adaptations that increase the amount of forward thrust as well as those that reduce drag. Again, these fishes are the envy of engineers. Their high, narrow tails with swept-back tips are almost perfectly adapted to provide propulsion with the least possible effort. Perhaps most important of all to these and other fast swimmers is their ability to sense and make use of swirls and eddies (circular currents) in the water. They can glide past eddies that would slow them down and then gain extra thrust by "pushing off" the eddies. Scientists and engineers are beginning to study this ability of fishes in the hope of designing more efficient propulsion systems for ships.

- 6. According to the passage, one of the adaptations of fast-swimming fishes that might be used to improve the performance of ships is these fishes' ability to
 - (A) swim directly through eddies
 - **B** make efficient use of water currents
 - © cover great distances without stopping
 - gain speed by forcing water past their gills

The muscles of these fishes and the mechanism that maintains a warm body temperature are also highly efficient. A bluefin tuna in water of 7°C (45°F) can maintain a core temperature of over 25°C (77°F). This warm body temperature may help not only the muscles to work better, but also the brain and the eyes. The billfishes have gone one step further. They have evolved special "heaters" of modified muscle tissue that warm the eyes and brain, maintaining peak performance of these critical organs.

- 7. According to paragraph 9, which of the following is true of bluefin tunas?
 - (A) Their eyes and brain are more efficient than those of any other fish.
 - (B) Their body temperature can change greatly depending on the water temperature.
 - (C) They can swim in waters that are much colder than their own bodies.
 - ① They have special muscle tissue that warms their eyes and brain.

Again, supersonic jets have similar features.

(A) Because they are always swimming, tunas simply have to open their mouths and water is forced in and over their gills. (B) Accordingly, they have lost most of the muscles that other fishes use to suck in water and push it past the gills. (C) In fact, tunas must swim to breathe. (D) They must also keep swimming to keep from sinking, since most have largely or completely lost the swim bladder, the gas-filled sac that helps most other fish remain buoyant.

8. **Directions:** Look at the part of the passage that is displayed above. The letters (A), (B), (C), and (D) indicate where the following sentence could be added.

Consequently, tunas do not need to suck in water.

Where would the sentence best fit?

- (A) Choice A
- (B) Choice B
- C Choice C
- ① Choice D
- Directions: Complete the table below by indicating which features of fishes are associated in the passage with reducing water resistance and which are associated with increasing thrust. This question is worth 3 points.

Reducing Water Resistance	Increasing Thrust
•	•
•	•
•	

- A The absence of scales from most of the body
- B The ability to take advantage of eddies
- C The ability to feed and reproduce while swimming
- D Eyes that do not protrude
- Fins that are stiff, narrow, and smooth
- F The habit of swimming with the mouth open
- G A high, narrow tail with swept-back tips

PRACTICE SET 6 ANSWERS AND EXPLANATIONS

- 2. This is a Rhetorical Purpose question. It asks why the author mentions that "Airplanes retract their landing gear while in flight." The phrase being tested is highlighted in the passage. The correct answer is choice D, "To demonstrate a similarity in design between certain fishes and airplanes." The paragraph in which the highlighted phrase appears describes how certain fish use their fins. The highlighted phrase is used to provide a more familiar example (airplanes) of the principle involved to help the reader visualize how fins work. The paragraph does not discuss airplanes in any other context, so choices B and C are incorrect. Air and water resistance are not mentioned in this paragraph, so choice A is incorrect.
- 3. This is a Factual Information question asking for specific information that can be found in paragraph 4. The correct answer is choice D, "reducing water resistance as they swim." The overall theme of the passage is how certain fish swim so efficiently. Paragraphs 1 and 2 make the general statement that "practically every aspect of the body form and function of these swimming 'machines' is adapted to enhance their ability to swim. Many of the adaptations of these fishes serve to reduce water resistance (drag)."

Paragraph 4 explicitly states (emphasis added), "Tunas, mackerels, and bill-fishes have even more sophisticated *adaptations than these to improve their hydrodynamics. The long bill* of marlins, sailfishes, and swordfish probably helps them slip through the water." This is a specific example of one adaptation that these fish have made to increase their swimming efficiency. None of the other choices is mentioned in the paragraph.

4. A This is a Factual Information question asking for specific information that can be found in the passage. The correct answer is choice A, "They lack a swim bladder."

Paragraph 6 explicitly states, "tunas must swim to breathe. They must also keep swimming to keep from sinking, since most have largely or completely lost the swim bladder." The other choices are not supported by the passage.

5. **•** This is a Sentence Simplification question. As with all of these questions, a single sentence in the passage is highlighted:

One potential problem is that opening the mouth to breathe detracts from the streamlining of these fishes and tends to slow them down.

The correct answer is choice D. That choice contains all of the essential ideas in the highlighted sentence. It is also the only choice that does not change the meaning of the sentence. It omits the fact that this is a "problem"

and also that it "detracts from the streamlining" because that information is not essential to the meaning.

Choice A says that these fish have trouble opening their mouths while swimming, which is not true. Choice B, that streamlining prevents fish from slowing down, may be true, but it is not mentioned in this sentence. The fish are slowed down when they open their mouths, which reduces streamlining. Choice C, that streamlining slows the fishes' breathing, is also not mentioned.

- 6. B This is a Factual Information question asking for specific information that can be found in the passage. The correct answer is choice B, "make efficient use of water currents." Paragraph 8 explicitly states, "Perhaps most important of all to these and other fast swimmers is their ability to sense and make use of swirls and eddies (circular currents) in the water. They can glide past eddies that would slow them down and then gain extra thrust by 'pushing off' the eddies. Scientists and engineers are beginning to study this ability of fishes in the hope of designing more efficient propulsion systems for ships." The other choices are not mentioned in connection with the performance of ships.
- 7. This is a Factual Information question asking for specific information that can be found in paragraph 9. The correct answer is choice C, "They can swim in waters that are much colder than their own bodies." That paragraph says, "A bluefin tuna in water of 7°C (45°F) can maintain a core temperature of over 25°C (77°F)." So it is clear that choice C is correct. Choice A is not stated in the paragraph. Choice B is contradicted by the paragraph. Choice D is true of billfish, not bluefin tuna.
- 8. **B** This is an Insert Text question. You can see the four possible answer choices in paragraph 6.

Again, supersonic jets have similar features.

(A) Because they are always swimming, tunas simply have to open their mouths and water is forced in and over their gills. (B) Accordingly, they have lost most of the muscles that other fishes use to suck in water and push it past the gills. (C) In fact, tunas must swim to breathe. (D) They must also keep swimming to keep from sinking, since most have largely or completely lost the swim bladder, the gas-filled sac that helps most other fish remain buoyant.

The sentence provided, "Consequently, tunas do not need to suck in water," is best inserted at choice (B). The sentence offers an explanation for the muscle loss described in the sentence that follows choice (B) and is a result of the fact described in the preceding sentence, which says that because the fish are always swimming, they only have to open their mouths to suck in water. Thus if the provided sentence is inserted at choice (B), it offers a logical bridge between cause and effect. The sentence makes no logical sense anywhere else.

9. This is a Fill in a Table question. It is completed correctly below. The correct choices for the "Reducing Water Resistance" column are A, D, and E. Choices B and G belong in the "Increasing Thrust" column. Choices C and F should not be used in either column.

Directions: Complete the table below by indicating which features of fishes are associated in the passage with reducing water resistance and which are associated with increasing thrust. **This question is worth 3 points.**

Reducing Water Resistance	Increasing Thrust
A The absence of scales from most of the body	B The ability to take advantage of eddies
D Eyes that do not protrude	A high, narrow tail with swept-back
Fins that are stiff, narrow, and smooth	tips

- A The absence of scales from most of the body
- B The ability to take advantage of eddies
- The ability to feed and reproduce while swimming
- D Eyes that do not protrude
- **E** Fins that are stiff, narrow, and smooth
- F The habit of swimming with the mouth open
- G A high, narrow tail with swept-back tips

Correct Choices

- *Choice A:* "The absence of scales from most of the body" belongs in the "Reducing Water Resistance" column because it is mentioned in paragraphs 3 and 5 as a factor that reduces water resistance.
- *Choice B:* "The ability to take advantage of eddies" belongs in the "Increasing Thrust" column because it is mentioned in paragraph 8 as a characteristic that helps increase thrust.
- *Choice D:* "Eyes that do not protrude" belongs in the "Reducing Water Resistance" column because it is mentioned in paragraph 3 as a factor that reduces water resistance.
- Choice E: "Fins that are stiff, narrow, and smooth" belongs in the "Reducing Water Resistance" column because it is mentioned in paragraph 3 as a factor that reduces water resistance.
- *Choice G:* "A high, narrow tail with swept-back tips" belongs in the "Increasing Thrust" column because it is mentioned in paragraph 8 as a characteristic that helps increase thrust.

Incorrect Choices

- *Choice C:* "The ability to feed and reproduce while swimming" does not belong in the table because it is not mentioned in the passage in connection with either reducing water resistance or increasing thrust.
- *Choice F:* "The habit of swimming with the mouth open" does not belong in the table because it is not mentioned in the passage in connection with either reducing water resistance or increasing thrust.