

## STUDY GUIDE

# 7B: Thinking, Problem Solving, Creativity, and Language

### UNIT OVERVIEW

The first part of Unit 7B deals with thinking, with emphasis on how people logically – or at times illogically – use tools such as algorithms and heuristics when making decisions and solving problems. Also discussed is the type of thinking that leads to creativity, as well as several common obstacles to problem solving. These include fixations that prevent us from taking a fresh perspective on a problem and our bias to search for information that confirms rather than challenges existing hypotheses. The section concludes with discussions of the power and perils of intuition and the effects of framing on decision making.

The rest of the unit is concerned with language, including its structure, development in children, and

relationship. to thinking. Two theories of language acquisition are evaluated: Skinner’s theory that language acquisition is based entirely on learning and Chomsky’s theory that humans have a biological predisposition to acquire language.

### UNIT REVIEW

First, skim each section, noting headings and boldface items. After you have read the section, review each objective by answering the fill-in and essay-type questions that follow it. As you proceed, evaluate your performance by consulting the answers. Do not continue with the next section until you understand each answer. If you need to, review or reread the section in the textbook before continuing.

### Thinking (pp. 298-312)

Objective 1: Define cognition, and describe the roles of categories, hierarchies, and prototypes in concept formation.

1. Cognition, or \_\_\_\_\_, can be defined as \_\_\_\_\_.
2. Scientists who study these mental activities are called \_\_\_\_\_.
3. People tend to organize specific items into mental groupings called \_\_\_\_\_, and many such groupings often are further organized into \_\_\_\_\_.
4. Concepts are typically formed through the development of a best example, or \_\_\_\_\_, of a category. People more easily detect (male/female) prejudice against (males/females) than vice versa.

Objective 2: Compare algorithms, heuristics, and insight as problem-solving strategies, and identify the factors associated with creativity.

5. Humans are especially capable of using their reasoning powers for coping with new situations, and thus for \_\_\_\_\_.
6. When we try each possible solution to a problem, we are using \_\_\_\_\_.
7. Logical, methodical, step-by-step procedures for solving problems are called \_\_\_\_\_.
8. Simple thinking strategies that provide us “with problem-solving shortcuts are referred to as \_\_\_\_\_.
9. When you suddenly realize a problem’s solution, \_\_\_\_\_ has occurred. Research studies show that such moments are preceded by \_\_\_\_\_ activity involved in focusing attention and accompanied by a burst of activity in the \_\_\_\_\_.
10. The ability to produce ideas that are both novel and valuable is called \_\_\_\_\_. Studies suggest that a certain level of \_\_\_\_\_ is necessary but (is/is not) sufficient for this ability.
11. Standard intelligence tests, which demand single correct answers to questions, measure \_\_\_\_\_.

Describe five components of creativity.

Objective 3: Explain how confirmation bias and fixation can interfere with problem solving.

12. The tendency of people to look for information that supports their preconceptions is called \_\_\_\_\_ .
13. It is human nature to seek evidence that \_\_\_\_\_ our ideas more eagerly than to seek evidence that might \_\_\_\_\_ them.
14. Not being able to take a new perspective when attempting to solve a problem is referred to as \_\_\_\_\_ . One example of this obstacle to problem solving is the tendency to repeat solutions that have worked previously; this phenomenon is known as the development of a \_\_\_\_\_ .
15. When a person is unable to envision using an object in an atypical way, \_\_\_\_\_ is operating.

Objective 4: Explain how the representativeness and availability heuristics can cause us to underestimate or ignore important information, and describe the drawbacks and advantages of overconfidence in decision making.

16. People judge how well something matches a particular prototype; this is the \_\_\_\_\_ .
17. When we judge the likelihood of something occurring in terms of how readily it comes to mind, we are using the \_\_\_\_\_ .

Explain how these two heuristics may lead us to make judgmental errors.

18. (Thinking Critically) Many people fear \_\_\_\_\_ more than driving and \_\_\_\_\_ more than accidents, despite the fact that these fears are not supported by death and injury statistics. This type of faulty thinking occurs because we fear
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_

19. The tendency of people to overestimate the accuracy of their knowledge results in \_\_\_\_\_ .
20. Overconfidence has \_\_\_\_\_ value because self-confident people tend to live (more/less) happily, find it (easier/harder) to make tough decisions, and seem (more/less) credible.
21. When research participants are given feedback on the accuracy of their judgments, such feedback generally (does/does

Objective 5: Describe the effects that belief perseverance, intuition, and framing can have on our judgments and decision making.

22. Research has shown that once we form a belief or a concept, it may take more convincing evidence for us to change the concept than it did to create it; this is because of \_\_\_\_\_ .
23. A cure for this is to \_\_\_\_\_ .
24. Intuitive reactions allow us to react \_\_\_\_\_ and in ways that are usually \_\_\_\_\_. They do so thanks, first, to our fast and frugal \_\_\_\_\_ and, second, thanks to our \_\_\_\_\_ .
25. The way an issue is posed is called \_\_\_\_\_. This effect influences political and business decisions, suggesting that our judgments (may/may not) always be well reasoned.

Objective 6: Describe the basic structural units of a language, including the rules that enable us to communicate meaning.

1. The basic sound units of language are its \_\_\_\_\_. English has approximately \_\_\_\_\_ of these units. The basic units of sign language are defined by \_\_\_\_\_ and \_\_\_\_\_ .
2. Phonemes are grouped into units of meaning called \_\_\_\_\_ .
3. The system of rules that enables us to use our language to speak to and understand others is called \_\_\_\_\_ .
4. The system by which meaning is derived from morphemes, words, and sentences is the \_\_\_\_\_ of a language.
5. The system of rules we use to combine words into grammatically sensible sentences is called \_\_\_\_\_ .

Objective 7: Trace the course of language acquisition from the babbling stage through the two-word stage.

6. By \_\_\_\_\_ months of age, babies can read lips and discriminate speech sounds. This marks the beginning of their \_\_\_\_\_ , their ability to comprehend speech. This ability begins to mature before their \_\_\_\_\_ , or ability to produce words.
7. The first stage of language development, in which children spontaneously utter different sounds, is the \_\_\_\_\_ stage. This stage typically begins at about \_\_\_\_\_ months of age. The sounds children make during this stage (do/do not) include only the sounds of the language they hear.
8. Deaf infants (do/ do not) babble. Many natural babbling sounds are \_\_\_\_\_ - \_\_\_\_\_ pairs formed by \_\_\_\_\_ .
9. By about \_\_\_\_\_ months of age, infant babbling begins to resemble the household language. At about the same time, the ability to perceive speech 'sounds outside their native language is (lost/acquired).
10. During the second stage, called the \_\_\_\_\_ stage, children convey complete thoughts using single words. This stage begins at about \_\_\_\_\_ year(s) of age.
11. During the \_\_\_\_\_ - \_\_\_\_\_ stage, children speak in sentences containing mostly nouns and verbs. This type of speech is called \_\_\_\_\_ speech. It(does/does not) follow the rules of syntax.

Objective 8: Discuss Skinner's and Chomsky's contributions to the nature-nurture debate over how children acquire language, and explain why statistical learning and critical periods are important concepts in children's language learning.

12. B. F. Skinner believed that language development follows the general principles of learning, including \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.
13. Other theorists believe that humans are biologically predisposed to learn language. One such theorist is \_\_\_\_\_, who believes that we all are born with a \_\_\_\_\_ \_\_\_\_\_ in which switches are thrown as children experience their language. This theorist contends that all human languages have the same grammatical building blocks, which suggests that there is a \_\_\_\_\_ \_\_\_\_\_.
14. Research by Jenny Saffran has demonstrated that even before \_\_\_\_\_ year(s) of age, infants are able to discern \_\_\_\_\_ \_\_\_\_\_ and \_\_\_\_\_ analyze which syllables most often go together.
15. Research studies of infants' knack for soaking up language suggest that babies come with a built-in readiness to learn \_\_\_\_\_ \_\_\_\_\_.
16. Childhood seems to represent a \_\_\_\_\_ \_\_\_\_\_ for mastering certain aspects of language. Those who learn a second language as adults usually speak it with the \_\_\_\_\_ of their first language. Moreover, they typically show (poorer/better) mastery of the \_\_\_\_\_ of the second language.
17. The window for learning language gradually begins to close after age \_\_\_\_\_. When a young brain doesn't learn any language, its language-learning capacity (never/may still) fully develop(s).
18. Considering the two theories together, we can say that although we are born with a readiness to learn language, \_\_\_\_\_ is also important, as shown in linguistically stunted children who have been isolated from language during the \_\_\_\_\_ \_\_\_\_\_ for its acquisition.

Objective 9: Discuss Whorf's linguistic determinism hypothesis in relation to current views regarding thinking and language, and describe the value of thinking in images.

1. According to the \_\_\_\_\_ \_\_\_\_\_ hypothesis, language shapes our thinking. The linguist who proposed this hypothesis is \_\_\_\_\_.
2. Many people who are bilingual report feeling a different sense of \_\_\_\_\_, depending on which language they are using.
3. In several studies, researchers have found that using the pronoun he (instead of he or she)(does/does not) influence people's thoughts concerning gender.
4. Bilingual children, who learn to inhibit one language while using their other language, are better able to inhibit their \_\_\_\_\_ to irrelevant information. This has been called the \_\_\_\_\_ \_\_\_\_\_.
5. One study of Canadian children found that English-speaking children who were \_\_\_\_\_ in French had higher \_\_\_\_\_ scores and math scores than control children.
6. It appears that thinking (can/cannot) occur without the use of language. Athletes often supplement physical with \_\_\_\_\_ practice.
7. In one study of psychology students preparing for a midterm exam, the greatest benefits were achieved by those who

Summarize the probable relationship between thinking and language.

## PROGRESS TEST 1

### *Multiple-Choice Questions*

Circle your answers to the following questions and check them with the answers beginning on page 180. If your answer is incorrect, read the explanation for why it is incorrect and then consult the appropriate pages of the text (in parentheses following the correct answer).

- The text defines cognition as
  - silent speech.
  - all mental activity.
  - the mental activities associated with thinking, knowing, remembering, and communicating information.
  - logical reasoning.
- A mental grouping of similar things, events, or people is called a(n)
  - prototype.
  - concept.
  - algorithm.
  - heuristic.
- When forming a concept, people often develop a best example, or \_\_\_\_\_, of a category.
  - denoter
  - heuristic
  - prototype
  - algorithm
- Confirmation bias refers to the tendency to
  - allow preexisting beliefs to distort logical reasoning.
  - cling to one's initial conceptions after the basis on which they were formed has been discredited.
  - search randomly through alternative solutions when problem solving.
  - look for information that is consistent with one's beliefs.
- The English language has approximately \_\_\_ phonemes.
  - 25
  - 30
  - 40
  - 45
- Which of the following is NOT true of babbling?
  - It is imitation of adult speech.
  - It is the same in all cultures.
  - It typically occurs from about age 4 months to 1 year.
  - Babbling increasingly comes to resemble a particular language.
- Mental set and functional fixedness" are two types of
  - algorithms.
  - heuristics.
  - fixation.
  - insight.
- Which of the following best describes the relationship between creativity and aptitude, as reflected in intelligence test scores?
  - Creativity appears to depend on the ability to think imaginatively and has little if any relationship to aptitude.
  - Creativity is best understood as a certain kind of intelligence.
  - The better a person's intelligence scores are, the greater his or her creativity.
  - A certain level of aptitude is necessary but not sufficient for creativity.
- Wharf's linguistic determinism hypothesis states that
  - language is primarily a learned ability.
  - language is partially an innate ability.
  - the size of a person's vocabulary reflects his or her intelligence.
  - our language shapes our thinking.
- Which of the following BEST describes Chomsky's view of language development?
  - Language is an entirely learned ability.
  - Language is an innate ability.
  - Humans have a biological predisposition to acquire language.
  - There are no cultural influences on the development of language.
- Failing to solve a problem that requires using an object in an unusual way illustrates the phenomenon of
  - mental set.
  - functional fixedness.
  - framing.
  - belief perseverance.
- Which of the following is an example of the use of heuristics?
  - trying every possible letter ordering when unscrambling a word
  - considering each possible move when playing chess
  - using the formula "area = length x width" to find the area of a rectangle
  - playing chess using a defensive strategy that has often been successful for you
- The chimpanzee Sultan used a short stick to pull a longer stick that "was out of reach into his cage. He then used the longer stick to reach a piece of fruit. Researchers hypothesized that Sultan's discovery of the solution to his problem was the result of:
  - trial and error.
  - heuristics.
  - functional fixedness.
  - insight.
- You hear that one of the Smith children is an outstanding Little League player and immediately conclude it's their one son rather than any of their four daughters. You reached your quite possibly erroneous conclusion as the result of
  - the confirmation bias.
  - the availability heuristic.
  - the representativeness heuristic.
  - the anchoring heuristic.

15. Deaf children who are not exposed to sign language until they are teenagers
- are unable to master the basic words of sign language.
  - learn the basic words but not how to order them.
  - are unable to master either the basic words or syntax of sign language.
  - never become as fluent as those who learned to sign at a younger age.
16. According to the text, language acquisition is best described as
- the result of conditioning and reinforcement.
  - a biological process of maturation.
  - an interaction between biology and experience.
  - a mystery of which researchers have no real understanding.
17. Infants as young as 6 months old display a remarkable ability to learn statistical aspects of speech. Specifically, research studies have shown that they
- are quickly able to recognize syllable sequences that appear repeatedly.
  - respond to changes in the pitch of a speaker's voice.
  - pay less attention to a same-gender voice.
  - do all of these things.
18. The linguistic determinism hypothesis is challenged by the finding that
- many of the language errors children make result from overgeneralizing grammatical rules.
  - people with no word for a certain color can still perceive that color accurately.
  - the Eskimo language contains a number of words for snow, whereas English has only one.
  - infants' babbling contains many phonemes that do not occur in their own language and that they therefore cannot have heard.
19. Several studies have indicated that the generic pronoun he
- tends for children and adults alike to trigger images of both males and females.
  - tends for adults to trigger images of both males and females, but for children to trigger images of males.
  - tends for both children and adults to trigger images of males but not females.
  - for both children and adults triggers images of females about one-fourth of the time it is used.

### ***Matching Items***

Match each definition or description with the appropriate term.

#### ***Definitions or Descriptions***

- \_\_\_ 1. the basic units of sound in a language
- \_\_\_ 2. the way an issue or question is posed
- \_\_\_ 3. rules for combining words into sentences
- \_\_\_ 4. the rules by which meaning is derived from sentences
- \_\_\_ 5. presuming that something is likely if it comes readily to mind
- \_\_\_ 6. the tendency to overestimate the accuracy of one's judgments
- \_\_\_ 7. being unable to see a problem from a different angle
- \_\_\_ 8. haphazard problem solving by trying one solution after another
- \_\_\_ 9. the sudden realization of the solution to a problem
- \_\_\_ 10. the tendency to repeat problem-solving techniques that worked in the past even though a fresh approach may be more appropriate
- \_\_\_ 11. the basic units of meaning in a language \_\_\_
- \_\_\_ 12. the ability to produce valuable and novel ideas

#### **Terms**

- a. syntax
- b. morphemes
- c. mental set
- d. trial and error
- e. availability heuristic
- f. phonemes
- g. semantics
- b. insight
- i. framing
- j. overconfidence
- k. fixation

## PROGRESS TEST 2

Progress Test 2 should be completed during a final unit review. Answer the following questions after you: thoroughly understand the correct answers for the section reviews and Progress Test 1.

### Multiple-Choice Questions

- A common problem in everyday reasoning is our tendency to
  - accept as logical those conclusions that agree with our own opinions
  - accept as logical those conclusions that disagree with our own opinions
  - underestimate the accuracy of our knowledge
  - accept as logical conclusions that involve unfamiliar concepts
- Phonemes are the basic units of \_\_\_\_\_ in language.
  - sound
  - meaning
  - grammar
  - semantics
- Syntax refers to the
  - sounds in a word.
  - rules for grouping words into sentences.
  - rules by which meaning is derived from sentences.
  - overall rules of a language.
- Skinner and other behaviorists have argued that language development is the result of
  - imitation.
  - reinforcement.
  - association.
  - all of these.
- Representativeness and availability are examples of
  - mental sets.
  - belief bias.
  - algorithms.
  - heuristics.
- The basic units of cognition are
  - phonemes.
  - concepts.
  - prototypes.
  - morphemes.
- Assume that Congress is considering revising its approach to welfare and to this end is hearing a range of testimony. A member of Congress who uses the availability heuristic would be most likely to
  - want to experiment with numerous possible approaches to see which of these seems to "work best."
  - want to cling to approaches to welfare that seem to have had some success in the past.
  - refuse to be budged from his or her beliefs despite persuasive testimony to the contrary.
  - base his or her ideas on the most vivid, memorable testimony given, even though many of the statistics presented run counter to this testimony.
- If you want to be absolutely certain that you will find the solution to a problem you know is solvable, you should use
  - a heuristic.
  - an algorithm.
  - insight.
  - trial and error.
- Complete the following: *-ed* is to *sh* as \_\_\_\_ is to \_\_\_\_
  - phoneme; morpheme
  - morpheme; phoneme
  - grammar; syntax
  - syntax; grammar
- Which of the following is NOT cited by Chomsky as evidence that language acquisition cannot be explained by learning alone?
  - Children master the complicated rules of grammar with ease.
  - Children create sentences they have never heard.
  - Children make the kinds of mistakes that suggest they are attempting to apply rules of grammar.
  - Children raised in isolation from language spontaneously begin speaking words.
- Telegraphic speech is typical of the stage.
  - babbling
  - one-word
  - two-word
  - three-word
- Children first demonstrate a rudimentary understanding of syntax during the stage.
  - babbling
  - one-word
  - two-word
  - three-word
- The study ill. which people who immigrated to the United States at various ages were compared in terms of their ability to understand English grammar found that
  - age of arrival had no effect on mastery of grammar.
  - those who immigrated as children understood grammar as well as native speakers.
  - those who immigrated as adults understood grammar as well as native speakers.
  - whether or not English was spoken in the home was the most important factor in mastering the rules of grammar.
- Regarding the relationship between thinking and language, which of the following most accurately reflects the position taken in the text?
  - Language determines everything about our thinking.
  - Language determines the way we think.
  - Thinking without language is not possible.
  - Thinking affects our language, which then affects our thought.
- The rules most directly involved in permitting a person to derive meaning from words and sentences are rules of
  - syntax.
  - grammar.
  - phonemic structure.
  - semantics.

16. Which of the following is true regarding the relationship between thinking and language?
- “Real” thinking requires the use of language.
  - People sometimes think in images rather than in words.
  - A thought that cannot be expressed in a particular language cannot occur to speakers of that language.
  - Even when we use the generic he, people understand that we are referring to males and females.
17. One reason an English-speaking adult may have difficulty pronouncing Russian words is that
- the vocal tracts of English-and Russian-speaking people develop differently in response to the demands of the two languages.
  - although English and Russian have very similar morphemes, their phonemic inventories are very different.
  - although English and Russian have very similar phonemes, their morphemic inventories are very different.
  - after the babbling stage, a child who hears only English stops uttering other phonemes.

### *True-False Items*

Indicate whether each statement is true or false by placing T or F in the blank next to the item.

- \_\_\_ 1. The order in which children acquire an understanding of various morphemes is unpredictable.
- \_\_\_ 2. According to the confirmation bias, people often interpret ambiguous evidence as support for their beliefs.
- \_\_\_ 3. Most human problem solving involves the use of heuristics rather than reasoning that systematically considers every possible solution.
- \_\_\_ 4. When asked, most people underestimate the accuracy of their judgments.
- \_\_\_ 5. Studies have shown that even animals may sometimes have insight reactions.
- \_\_\_ 6. Mental set is the tendency to repeat problem-solving solutions that have worked in the past.
- \_\_\_ 7. Although the morphemes differ from language to language, the phonemes for all languages are the same.
- \_\_\_ 8. Children of all cultures babble using the same phonemes.
- \_\_\_ 9. Thinking without using language is not possible.
- \_\_\_ 10. Most researchers believe that we can perform statistical analyses of language throughout our lives.

### **PSYCHOLOGY APPLIED**

Answer these questions the day before a test as a final check on your understanding of the unit’s terms and concepts.

#### *Multiple-Choice Questions*

- The word “predates” contains \_\_\_phonemes and \_\_\_morphemes.
  - 7; 3
  - 3;7
  - 7; 2
  - 3;2
- Vanessa is a very creative sculptress. We would expect that Vanessa also
  - has an exceptionally high intelligence test . score.
  - is quite introverted.
  - has a venturesome personality and is intrinsically motivated.
  - lacks expertise in most other skills.
- A listener hearing a recording of Japanese, Spanish, and North American children babbling would
  - not be able to tell them apart.
  - be able to tell them apart if they were older than 6 months.
  - be able to tell them apart if they were older than 8 to 10 months.
  - be able to tell them apart at any age.
- Which of the following illustrates belief perseverance?
  - Your belief remains intact even in the face of evidence to the contrary.
  - You refuse to listen to arguments counter to your beliefs.
  - You tend to become flustered and angered when your beliefs are refuted.
  - You tend to search for information that supports your

5. Complete the following analogy: Rose is to flower as
  - a. concept is to prototype.
  - b. prototype is to concept.
  - c. concept is to hierarchy.
  - d. hierarchy is to concept.
6. Your stand on an issue such as the use of nuclear power for electricity involves personal judgment. In such a case, one memorable occurrence can weigh more heavily than a bookful of data, thus illustrating
  - a. belief perseverance.
  - b. confirmation bias.
  - c. the representativeness heuristic.
  - d. the availability heuristic.
7. A dessert recipe that gives you the ingredients, their amounts, and the steps to follow is an example of a(n)
  - a. prototype.
  - b. algorithm.
  - c. heuristic.
  - d. mental set.
8. Marilyn was asked to solve a series of five math problems. The first four problems could only be solved by a particular sequence of operations. The fifth problem could also be solved following this sequence; however, a much simpler solution “was possible. Marilyn did not realize this simpler solution and solved the problem in the way she had solved the first four. Her problem-solving strategy was hampered by
  - a. functional fixedness.
  - b. the overconfidence phenomenon.
  - c. mental set.
  - d. her lack of a prototype for the solution.
9. Dr. Mendoza is studying the mental strategies people use when solving problems. Dr. Mendoza is clearly a(n)
  - a. cognitive psychologist.
  - b. experimental psychologist.
  - c. organizational psychologist.
  - d. developmental psychologist.
10. Boris the chess master selects his next move by considering moves that would threaten his opponent’s queen. His opponent, a chess-playing computer, selects its next move by considering all possible moves. Boris is using a(n) \_\_\_ and the computer is using a(n) \_\_\_.
  - a. algorithm; heuristic
  - b. prototype; mental set
  - c. mental set; prototype
  - d. heuristic; algorithm
11. During a televised political debate, the Republican and Democratic candidates each argued that the results of a recent public opinion poll supported their party’s platform regarding job creation. Because both candidates saw the information as supporting their belief, it is clear that both were victims of
  - a. functional fixedness.
  - b. mental set.
  - c. belief perseverance.
  - d. confirmation bias.
12. The child who says “Milk gone” is engaging in \_\_\_\_\_. This type of utterance demonstrates that children are actively experimenting with the rules of \_\_\_\_\_.
  - a. babbling; syntax
  - b. telegraphic speech; syntax
  - c. babbling; semantics
  - d. telegraphic speech; semantics
13. Experts in a field prefer heuristics to algorithms because heuristics
  - a. guarantee solutions to problems.
  - b. prevent mental sets.
  - c. often save time.
  - d. prevent fixation.
14. Rudy is 6 feet 6 inches tall, weighs 210 pounds, and is very muscular. If you think that Rudy is more likely to be a basketball player than a computer programmer, you are a victim of
  - a. belief perseverance.
  - b. mental set.
  - c. functional fixedness.
  - d. the representativeness heuristic.
15. Failing to see that an article of clothing can be inflated as a life preserver is an example of
  - a. belief perseverance.
  - b. the availability heuristic.
  - c. the representativeness heuristic.
  - d. functional fixedness.
16. Airline reservations typically decline after a highly publicized airplane crash because people overestimate the incidence of such disasters. In such instances, their decisions are being influenced by
  - a. belief perseverance.
  - b. the availability heuristic.
  - c. the representativeness heuristic.
  - d. functional fixedness.
17. Most people tend to
  - a. accurately estimate the accuracy of their knowledge and judgments.
  - b. underestimate the accuracy of their knowledge and judgments.
  - c. overestimate the accuracy of their knowledge and judgments.
  - d. lack confidence in their decision-making strategies.
18. In relation to ground beef, consumers respond more positively to an ad describing it as “75 percent lean” than to one referring to its “25 percent fat” content. This is an example of
  - a. the framing effect.
  - b. confirmation bias.
  - c. mental set.
  - d. overconfidence.
19. The sentence “Blue jeans wear false smiles” has correct but incorrect \_\_\_\_\_.
  - a. morphemes; phonemes
  - b. phonemes; morphemes
  - c. semantics; syntax
  - d. syntax; semantics

20. In preparing her class presentation, "Updating Chomsky's Understanding of Language Development," Britney's outline includes all of the following evidence EXCEPT that
- computers programmed to learn to form the past tense of irregular verbs can learn to do so, even without "inborn" linguistic rules.
  - infants rapidly learn to detect subtle differences between simple sequences of syllables.
  - infants can recognize color differences even before they can name different colors.
  - children isolated from language during the first seven years of life never fully develop language.

### *Essay Question*

The lectures of your linguistics professor, who happens to be a staunch behaviorist, clearly imply that she believes language development can be explained according to principles of conditioning. What evidence should you present to convince her that she is wrong? (Use the space below to list the points you want to make, and organize them. Then write the essay on a separate piece of paper.)

### **KEY TERMS**

Using your own words, on a piece of paper write a brief definition or explanation of each of the following terms:

- cognition
- concept
- prototype
- algorithm
- heuristic
- insight
- creativity
- confirmation bias
- fixation
- mental set
- functional fixedness
- representativeness heuristic
- availability heuristic
- overconfidence
- belief perseverance
- intuition
- framing
- language

19. phoneme
20. morpheme
21. grammar
22. semantics
23. syntax
24. babbling stage
25. one-word stage
26. two-word stage
27. telegraphic speech
28. linguistic determinism