

convergent thinking, thinking pointed toward one solution, and *divergent thinking*, thinking that searches for multiple possible answers to a question. Divergent thinking is more closely associated with creativity. Creative activities usually involve thinking of new ways to use what we are all familiar with or new ways to express emotions or ideas we share. Painting by the numbers is convergent thinking, but we would probably call painting outside the lines and/or mixing your own hues creative and divergent thinking.

Practice Questions

Directions: Each of the questions or incomplete statements below is followed by five suggested answers or completions. Select the one that is best in each case.

1. Mr. Krohn, a carpenter, is frustrated because he misplaced his hammer and needs to pound in the last nail in the bookcase he is building. He overlooks the fact that he could use the tennis trophy sitting above the workbench to pound in the nail. Which concept best explains why Mr. Krohn overlooked the trophy?
 - (A) representativeness heuristic
 - (B) retrieval
 - (C) functional fixedness
 - (D) belief bias
 - (E) divergent thinking

2. Phonemes and morphemes refer to
 - (A) elements of telegraphic speech toddlers use.
 - (B) elements of language.
 - (C) building blocks of concepts.
 - (D) basic elements of memories stored in long-term memory.
 - (E) two types of influences language has on thought according to the linguistic relativity hypothesis.

3. Which example would be better explained by the levels of processing model than the information-processing model?
 - (A) Someone says your name across the room and you switch your attention away from the conversation you are having.
 - (B) You forget part of a list you were trying to memorize for a test.
 - (C) While visiting with your grandmother, you recall one of your favorite childhood toys.
 - (D) You are able to remember verbatim a riddle you worked on for a few days before you figured out the answer.
 - (E) You pay less attention to the smell of your neighbor's cologne than to the professor's lecture in your college class.

4. Contrary to what Whorf's linguistic relativity hypothesis originally predicted, what effect does recent research indicate language has on the way we think?
- (A) Since we think in language, the language we understand limits what we have the ability to think about.
 - (B) Language is a tool of thought but does not limit our cognition.
 - (C) The labels we apply affect our thoughts.
 - (D) The words in each language affect our ability to think because we are restricted to the words each language uses.
 - (E) The linguistic relativity hypothesis predicts that how quickly we acquire language correlates with our cognitive ability.
5. Which of the following is an example of the use of the representativeness heuristic?
- (A) Judging that a young person is more likely to be the instigator of an argument than an older person, because you believe younger people are more likely to start fights.
 - (B) Breaking a math story problem down into smaller, representative parts, in order to solve it.
 - (C) Judging a situation by a rule that is usually, but not always, true.
 - (D) Solving a problem with a rule that guarantees the right, more representative, answer.
 - (E) Making a judgment according to past experiences that are most easily recalled, therefore representative of experience.
6. Which of the following is the most complete list of elements in the three-box/information-processing model?
- (A) Sensory memory, constructive memory, working memory, and long-term memory.
 - (B) Short-term memory, working memory, and long-term memory.
 - (C) Shallow processing, deep processing, and retrieval.
 - (D) Sensory memory, encoding, working memory, and retrieval.
 - (E) Sensory memory, working memory, encoding, long-term memory, and retrieval.
7. Which of the following is an effective method for testing whether a memory is actually true or whether it is a constructed memory?
- (A) Checking to see whether it was deeply processed or shallowly processed.
 - (B) Testing to see if the memory was encoded from sensory memory into working memory.
 - (C) Using a PET scan to see if the memory is stored in the hippocampus.
 - (D) Using other evidence, such as written records, to substantiate the memory.
 - (E) There is no way to tell the difference between a true memory and a constructed one.

8. One of the ways memories are physically stored in the brain is by what process?
 - (A) Deep processing, which increases levels of neurotransmitters in the hippocampus.
 - (B) Encoding, which stimulates electric activity in the hippocampus.
 - (C) Long-term potentiation, which strengthens connections between neurons.
 - (D) Selective attention, which increases myelination of memory neurons.
 - (E) Rehearsal, which causes the brain to devote more neurons to what is being rehearsed.

9. According to the nativist theory, language is acquired
 - (A) by parents reinforcing correct language use.
 - (B) using an inborn ability to learn language at a certain developmental stage.
 - (C) best in the language and culture native to the child and parents.
 - (D) only if formal language instruction is provided in the child's native language.
 - (E) best through the phonics instructional method, because children retain how to pronounce all the phonemes required for the language.

10. According to the three-box/information-processing model, stimuli from our outside environment is first stored in
 - (A) working memory.
 - (B) the hippocampus.
 - (C) the thalamus.
 - (D) sensory memory.
 - (E) selective attention.

11. Which of the following is the best example of the use of the availability heuristic?
 - (A) Judging a situation by a rule that is usually, but not always, true.
 - (B) Making a judgment according to past experiences that are most easily recalled.
 - (C) Judging that a problem should be solved using a formula that guarantees the right answer.
 - (D) Making a judgment according to what is usually true in your experience.
 - (E) Solving a problem by breaking it into more easily available parts.

12. Which sentence most accurately describes sensory memory?
- (A) Sensory memory stores all sensory input perfectly accurately for a short period of time.
 - (B) Sensory memory encodes only sensations we are attending to at the time.
 - (C) Sensory memory receives memories from the working memory and decides which memories to encode in long-term memory.
 - (D) Sensory memory records all incoming sensations and remembers them indefinitely.
 - (E) Sensory memory records some sensations accurately, but some are recorded incorrectly, leading to constructive memory.
13. Recall is a more difficult process than recognition because
- (A) memories retrieved by recognition are held in working memory, and recalled memories are in long-term memory.
 - (B) memories retrieved by recognition are more deeply processed.
 - (C) the process of recall involves cues to the memory that causes interference.
 - (D) memories retrieved by recognition are more recent than memories retrieved by recall.
 - (E) the process of recognition involves matching a person, event, or object with something already in memory.
14. Which of the following would be the best piece of evidence for the nativist theory of language acquisition?
- (A) A child who acquires language at an extremely early age through intense instruction by her or his parents.
 - (B) Statistical evidence that children in one culture learn language faster than children in another culture.
 - (C) A child of normal mental ability not being able to learn language due to language deprivation at an early age.
 - (D) A child skipping the babbling and telegraphic speech stages of language acquisition.
 - (E) A child deprived of language at an early age successfully learning language later.
15. A friend mentions to you that she heard humans never forget anything; we remember everything that ever happens to us. What concept from memory research most directly contradicts this belief?
- (A) sensory memory
 - (B) selective attention
 - (C) long-term memory
 - (D) constructive memory
 - (E) recovered memory

ANSWERS TO PRACTICE QUESTIONS

1. (C) Functional fixedness would explain that Mr. Krohn did not think of another use for the trophy, to use it as a hammer. The representativeness heuristic is a rule of thumb for making a judgment that does not apply well to this example, retrieval is a step in the memory process, and divergent thinking is associated with creative thinking. Belief bias is our tendency to stick with a belief even when presented with contrary evidence.
2. (B) Phonemes and morphemes are elements of language. They are not used exclusively in telegraphic speech or associated with memory, the linguistic relativity hypothesis, or concepts.
3. (D) The levels of processing model would predict that you would remember the riddle because it was deeply processed. Both the levels of processing model and the three-box/information-processing model could explain the other examples, but choice D best fits levels of processing.
4. (C) Research demonstrates that the labels we apply to objects, people, and concepts affects how we think and perceive them, but there is little evidence for other ways language influences thoughts. Whorf's hypothesis states that language restricts thought, but our cognition is not strictly limited by our vocabulary (choices A and D). The linguistic relativity hypothesis has nothing to do with language acquisition.
5. (A) The representativeness heuristic is judging a situation based on how similar the aspects are to prototypes the person holds in his or her mind. If a person has a prototype of young people as violent, she or he might use the representativeness heuristic to judge the situation. Breaking the problem down into smaller parts is a problem-solving technique. Judging a situation by a rule that is usually, but not always, true is a description of heuristics in general, not specifically the representativeness heuristic. An algorithm is a rule that guarantees the right answer. Making a judgment according to past experiences that are most easily recalled is the availability heuristic, not the representativeness heuristic.
6. (E) All five elements listed in this answer are elements in the three-box/information-processing model. Constructive memory mentioned in choice A is not part of this model (although the model can explain this phenomenon). Choice B is less complete than choice E. Choice C describes the levels of processing model. Choice D is missing long-term processing.
7. (D) The only way to determine if a memory is accurate or constructed is to look at other evidence for the "remembered" event. Brain scans and memory models cannot differentiate between true and false memories.

8. **(C)** Long-term potentiation strengthens neural connections by allowing them to communicate more efficiently. The other options do not describe brain processes accurately.
9. **(B)** The nativist theory states that we are born with a language acquisition device that enables us to learn language best as children. Choice A reflects a behavioristic view of language acquisition. Nativist theory has nothing to do with native languages or the phonics instructional method.
10. **(D)** Sensory memory is the split-second holding area for sensory information. Some information from sensory memory is encoded into working memory, and this process is controlled by selective attention. The three-box/information-processing model does not refer to specific brain structures like the hippocampus or the thalamus.
11. **(B)** By using the availability heuristic, we draw on examples that are the most readily recalled. Choice A is a good description of heuristics in general but not specifically the availability heuristic. Using a formula or rule that always gets the correct answer is an algorithm. Choice D more accurately describes the representativeness heuristic. Breaking a problem into more easily solved parts is a problem-solving technique, not the availability heuristic.
12. **(A)** Sensory memory holds all sensations accurately for a split second. Selective attention determines which of the memories in sensory memory we will pay attention to. Choice C is incorrect because sensory memory comes before working memory in the three-box/information-processing model. Sensory memory does not last indefinitely and does not record incorrectly, so choices D and E are incorrect.
13. **(E)** Recognition is matching a current experience with one already in memory. Choices A and B are incorrect descriptions of the process. The process of recall does not involve cues, and no difference in recency occurs between recalled and recognized memories.
14. **(C)** The critical-period hypothesis states that children need to learn language during a certain developmental period or their language may be permanently retarded. A child learning language early due to parental instruction is better evidence for the behaviorist view of language acquisition. Language-learning rates between cultures or skipping stages are irrelevant to the critical-period hypothesis. A child deprived of language early on who successfully learns language later would be evidence against the critical-period hypothesis.

15. **(B)** The concept of selective attention contradicts this statement. Selective attention determines what sensations we attend to and encode into short-term memory. Research shows that stimuli not attended to are not remembered, so we do not remember everything that happens to us. Sensory memory, long-term memory, and constructed memories do not obviously contradict the statement. The phenomenon of recovered memories might support the statement. Those who believe in recovered memories believe that we can remember an event for years or decades without being aware of it.