

**Math Test**  
**Bin 1—Easier Questions**  
**26 Questions**

**This test is composed of both problem solving questions and data sufficiency questions.**

**Problem Solving Directions:** Solve each problem and choose the best of the answer choices provided.

**Data Sufficiency Directions:** Each data sufficiency problem consists of a question and two statements, labeled (1) and (2), which contain certain data. Using these data and your knowledge of mathematics and everyday facts (such as the number of days in July or the meaning of *counterclockwise*), decide whether the data given are sufficient for answering the question and then indicate one of the following answer choices:

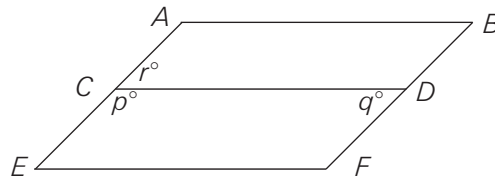
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
- (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
- (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
- (D) EACH statement ALONE is sufficient.
- (E) Statements (1) and (2) TOGETHER are not sufficient.

1. What percent of 112 is 14 ?

- (A) 0.125%
- (B) 8%
- (C) 12.5%
- (D) 125%
- (E) 800%

2. The number of flights leaving a certain airport doubles during every one-hour period between 9 A.M. and noon; after noon, the number of flights leaving from the airport doubles during every two-hour period. If 4 flights left from the airport between 9 and 10 A.M., how many flights left the airport between 2 and 4 P.M. ?

- (A) 32
- (B) 48
- (C) 64
- (D) 128
- (E) 256



3. If both  $ABDC$  and  $CDFE$  are parallelograms, what is  $q + r$  ?

- (1)  $r = 70$
- (2)  $p = 110$
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
- (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
- (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
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4. Chris's convertible gets gas mileage that is 40 percent greater than that of Stan's SUV. If Harry's hatchback gets gas mileage that is 15 percent greater than that of Chris's convertible, then Harry's hatchback gets gas mileage that is what percent greater than that of Stan's SUV?
- (A) 25%  
(B) 46%  
(C) 55%  
(D) 61%  
(E) 66%
5. If  $x$  is equal to 1 more than the product of 3 and  $z$ , and  $y$  is equal to 1 less than the product of 2 and  $z$ , then  $2x$  is how much greater than  $3y$  when  $z$  is 4?
- (A) 1  
(B) 2  
(C) 3  
(D) 5  
(E) 6
6. In 2005, did Company  $A$  have more than twice the number of employees that Company  $B$  did?
- (1) In 2005, Company  $A$  had 11,500 more employees than did Company  $B$ .  
(2) In 2005, the 3,000 employees with advanced degrees at Company  $A$  made up 12.5 percent of that company's total number employees, and the 2,500 employees with advanced degrees at Company  $B$  made up 20 percent of that company's total number of employees.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
(B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
(C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
(D) EACH statement ALONE is sufficient.  
(E) Statements (1) and (2) TOGETHER are not sufficient.
7. Is  $x^3$  equal to 125?
- (1)  $x > 4$   
(2)  $x < 6$
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
(B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
(C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
(D) EACH statement ALONE is sufficient.  
(E) Statements (1) and (2) TOGETHER are not sufficient.
8. Bob leaves point  $A$  and drives due west to point  $B$ . From point  $B$ , he drives due south to point  $C$ . How far is Bob from his original location?
- (1) Point  $A$  is 24 miles from point  $B$ .  
(2) Point  $B$  is 18 miles from point  $C$ .
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
(B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
(C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
(D) EACH statement ALONE is sufficient.  
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9. The formula  $M = \sqrt{l^2 + w^2 + d^2}$  describes the relationship between the length of  $M$ , which is the longest line that can be drawn in a rectangular solid, and the length,  $l$ , width,  $w$ , and depth,  $d$ , of that rectangular solid. The longest line that can be drawn in a rectangular solid with a length of 12, a width of 4, and a depth of 3 is how much longer than the longest line that can be drawn in a rectangular solid with a length of 6, a width of 3, and a depth of 2?
- (A) 5  
 (B) 6  
 (C) 7  
 (D) 9  
 (E) 13
10. Is the average (arithmetic mean) of  $a$ ,  $b$ , and  $c$  equal to 8?
- (1) Three times the sum of  $a$ ,  $b$ , and  $c$  is equal to 72.  
 (2) The sum of  $2a$ ,  $2b$ , and  $2c$  is equal to 48.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are not sufficient.

11.  $\sqrt{\sqrt{\left(1 + \frac{17}{64}\right)}} =$

- (A)  $\frac{\sqrt{34}}{8}$   
 (B)  $\frac{3\sqrt{2}}{4}$   
 (C)  $\frac{9}{8}$   
 (D)  $\frac{\sqrt{68}}{4}$   
 (E)  $\frac{3\sqrt{2}}{2}$
12. A certain stadium is currently full to  $\frac{13}{16}$  of its maximum seating capacity. What is the maximum seating capacity of the stadium?
- (1) If 1,250 people were to enter the stadium, the stadium would be full to  $\frac{15}{16}$  of its maximum seating capacity.  
 (2) If 2,500 people were to leave the stadium, the stadium would be full to  $\frac{9}{16}$  of its maximum seating capacity.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are not sufficient.

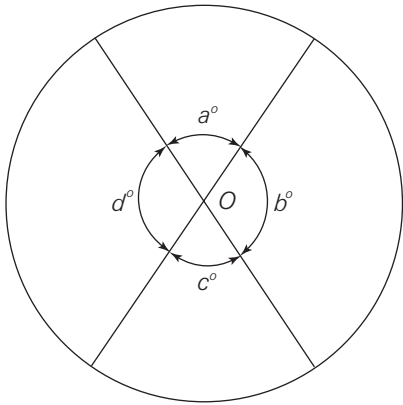
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13. Andre has already saved  $\frac{3}{7}$  of the cost of a new car, and he has calculated that he will be able to save  $\frac{2}{5}$  of the remaining amount before the end of the summer. What fraction of the cost of the new car will he still need to save after the end of the summer?
- (A)  $\frac{6}{35}$   
 (B)  $\frac{8}{35}$   
 (C)  $\frac{12}{35}$   
 (D)  $\frac{23}{35}$   
 (E)  $\frac{29}{35}$
- {1, 4, 6,  $y$ }
14. If the average (arithmetic mean) of the set of numbers above is 6, then what is the median?
- (A) 5  
 (B) 6  
 (C) 7  
 (D) 13  
 (E) 24
15. A store sells a six-pack of soda for \$2.70. If this represents a savings of 10 percent of the individual price of cans of soda, then what is the price of a single can of soda?
- (A) \$ 0.35  
 (B) \$ 0.40  
 (C) \$ 0.45  
 (D) \$ 0.50  
 (E) \$ 0.55
16. If Beth spent \$400 of her earnings last month on rent, how much did Beth earn last month?
- (1) Beth saved  $\frac{1}{3}$  of her earnings last month and spent half of the remainder on rent.  
 (2) Beth earned twice as much this month as last month.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are not sufficient.
17. If  $n$  is an integer, is  $n$  even?
- (1)  $2n$  is an even integer.  
 (2)  $n - 1$  is an odd integer.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are not sufficient.

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18. At apartment complex Z, 30 percent of the residents are men over the age of 18, and 40 percent are women over the age of 18. If there are 24 children living in the complex, how many total residents live in apartment complex Z?
- (A) 32  
(B) 80  
(C) 94  
(D) 112  
(E) 124
19. Over the course of a soccer season, 30 percent of the players on a team scored goals. What is the ratio of players on the team who scored goals to those who did not?
- (A) 3 to 10  
(B) 1 to 3  
(C) 3 to 7  
(D) 1 to 1  
(E) 3 to 1
20. At a restaurant, Luis left a tip for his waiter equal to 20 percent of his entire dinner check, including tax. What was the amount of the dinner check?
- (1) The sum of the dinner check and the tip was \$16.80.  
(2) Luis's tip consisted of two bills and four coins.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
(B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
(C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
(D) EACH statement ALONE is sufficient.  
(E) Statements (1) and (2) TOGETHER are not sufficient.
21. Which sport utility vehicle has a higher list price, the Touristo or the Leisure?
- (1) The list price of the Leisure is  $\frac{5}{6}$  the list price of the Touristo.  
(2) The list price of the Touristo is 1.2 times the list price of the Leisure.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
(B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
(C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
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22. In the circle above, center  $O$  is intersected by 2 straight lines, and  $3a = b$ . What is the value of  $b - a$  ?
- (A) 2
  - (B) 30
  - (C) 45
  - (D) 90
  - (E) 135

23. What is the value of integer  $w$  ?
- (1)  $w$  is a multiple of 3.
  - (2)  $420 < w < 425$
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
  - (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
  - (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
  - (D) EACH statement ALONE is sufficient.
  - (E) Statements (1) and (2) TOGETHER are not sufficient.

24. What is the quotient when 0.25% of 600 is divided by 0.25 of 600 ?
- (A) 10
  - (B) 1
  - (C) 0.1
  - (D) 0.01
  - (E) 0.001
25. A certain town's economic development council has 21 members. If the number of females on the council is 3 less than 3 times the number of males on the council, then the town's economic development council has how many male members?
- (A) 5
  - (B) 6
  - (C) 7
  - (D) 9
  - (E) 15
26. Roger can chop down 4 trees in an hour. How long does it take Vincent to chop down 4 trees?
- (1) Vincent spends 6 hours per day chopping down trees.
  - (2) Vincent takes twice as long as Roger to chop down trees.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
  - (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
  - (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
  - (D) EACH statement ALONE is sufficient.
  - (E) Statements (1) and (2) TOGETHER are not sufficient.

END OF BIN.

**Math Test**  
**Bin 2—Medium Questions**  
**27 Questions**

**This test is composed of both problem solving questions and data sufficiency questions.**

**Problem Solving Directions:** Solve each problem and choose the best of the answer choices provided.

**Data Sufficiency Directions:** Each data sufficiency problem consists of a question and two statements, labeled (1) and (2), which contain certain data. Using these data and your knowledge of mathematics and everyday facts (such as the number of days in July or the meaning of *counterclockwise*), decide whether the data given are sufficient for answering the question and then indicate one of the following answer choices:

- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
  - (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
  - (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
  - (D) EACH statement ALONE is sufficient.
  - (E) Statements (1) and (2) TOGETHER are not sufficient.
- 

1. If  $x = \frac{\frac{5}{9} + \frac{15}{27} + \frac{45}{81}}{3}$ , then  $\sqrt{1-x} =$

- (A)  $\frac{\sqrt{5}}{9}$
- (B)  $\frac{5}{9}$
- (C)  $\frac{2}{3}$
- (D)  $\frac{\sqrt{5}}{3}$
- (E)  $\frac{15}{9}$

2. Steven has run a certain number of laps around a track at an average (arithmetic mean) time per lap of 51 seconds. If he runs one additional lap in 39 seconds and reduces his average time per lap to 49 seconds, how many laps did he run at an average time per lap of 51 seconds?

- (A) 2
- (B) 5
- (C) 6
- (D) 10
- (E) 12

3.  $200^2 - 2(200)(199) + 199^2 =$

- (A) -79,201
- (B) -200
- (C) 1
- (D) 200
- (E) 79,999

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4. If  $x \neq \frac{1}{2}$ , then  $\frac{6x^2 + 11x - 7}{2x - 1} =$
- (A)  $3x + 7$   
 (B)  $3x - 7$   
 (C)  $3x + 1$   
 (D)  $x + 7$   
 (E)  $x - 7$
5. If Amy drove the distance from her home to the beach in less than 2 hours, was her average speed greater than 60 miles per hour?
- (1) The distance that Amy drove from her home to the beach was less than 125 miles.  
 (2) The distance that Amy drove from her home to the beach was greater than 122 miles.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are not sufficient.
6. If  $x = m - 1$ , which of the following is true when  $m = \frac{1}{2}$ ?
- (A)  $x^0 > x^2 > x^3 > x^1$   
 (B)  $x^0 > x^2 > x^1 > x^3$   
 (C)  $x^0 > x^1 > x^2 > x^3$   
 (D)  $x^2 > x^0 > x^3 > x^1$   
 (E)  $x^3 > x^2 > x^1 > x^0$
7. If a comedian plays two shows and twice as many tickets are available for the evening show as for the afternoon show, what percentage of the total number of tickets available for both shows has been sold?
- (1) A total of 450 tickets are available for both shows.  
 (2) Exactly  $\frac{3}{5}$  of the tickets available for the afternoon show have been sold, and exactly  $\frac{1}{5}$  of the tickets available for the evening show have been sold.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are not sufficient.
8. If  $\frac{1}{y} = 2\frac{2}{3}$ , then  $\left(\frac{1}{y+1}\right)^2 =$
- (A)  $\frac{9}{64}$   
 (B)  $\frac{3}{8}$   
 (C)  $\frac{64}{121}$   
 (D)  $\frac{121}{64}$   
 (E)  $\frac{64}{9}$

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9. An operation  $\sim$  is defined by  $a \sim b = \frac{a+b}{(ab)^2}$  for all numbers  $a$  and  $b$  such that  $ab \neq 0$ . If  $c \neq 0$  and  $a \sim c = 0$ , then  $c =$
- (A)  $-a$   
 (B)  $0$   
 (C)  $\sqrt{a}$   
 (D)  $a$   
 (E)  $a^2$
10. If  $x$  is a positive integer, is the greatest common factor of 150 and  $x$  a prime number?
- (1)  $x$  is a prime number.  
 (2)  $x < 4$
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are not sufficient.

$$X = \{9, 10, 11, 12\}$$

$$Y = \{2, 3, 4, 5\}$$

11. If one number is chosen at random from each of the sets above and the number from Set  $X$  is divided by the number from Set  $Y$ , what is the probability that the result is an integer?
- (A)  $\frac{1}{16}$   
 (B)  $\frac{3}{8}$   
 (C)  $\frac{1}{2}$   
 (D)  $\frac{3}{4}$   
 (E)  $\frac{15}{16}$
12. If  $p$  and  $q$  are integers, is  $\frac{p+q}{2}$  an integer?
- (1)  $p < 17$   
 (2)  $p = q$
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
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13. A perfectly spherical satellite with a radius of 4 feet is being packed for shipment to its launch site. If the inside dimensions of the rectangular crates available for shipment, when measured in feet, are consecutive even integers, then what is the volume of the smallest available crate that can be used? (Note: the volume of a sphere is given by the equation  $V = \frac{4}{3}\pi r^3$ .)
- (A) 48  
(B) 192  
(C) 480  
(D) 960  
(E) 1,680
14. Richard is 6 years older than David, and David is 8 years older than Scott. In 8 years, if Richard will be twice as old as Scott, then how old was David 4 years ago?
- (A) 8  
(B) 10  
(C) 12  
(D) 14  
(E) 16
15. What is the value of  $x$  ?
- (1)  $x^2 - 5x + 4 = 0$   
(2)  $x$  is not prime.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
(B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
(C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
(D) EACH statement ALONE is sufficient.  
(E) Statements (1) and (2) TOGETHER are not sufficient.
16. John and Jessica are invited to a dance. If there are 7 men and 7 women in total at the dance, and one woman and one man are chosen to lead the dance, what is the probability that John and Jessica will NOT be the pair chosen to lead the dance?
- (A)  $\frac{1}{49}$   
(B)  $\frac{1}{7}$   
(C)  $\frac{6}{7}$   
(D)  $\frac{47}{49}$   
(E)  $\frac{48}{49}$
17. What is the surface area of rectangular solid  $Y$  ?
- (1) The dimensions of one face of rectangular solid  $Y$  are 2 by 3.  
(2) The volume of rectangular solid  $Y$  is 12.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
(B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
(C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
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18. A six-sided die with faces numbered one through six is rolled three times. What is the probability that the face with the number 6 on it will NOT be facing upward on all three rolls?
- (A)  $\frac{1}{216}$   
(B)  $\frac{1}{6}$   
(C)  $\frac{2}{3}$   
(D)  $\frac{17}{18}$   
(E)  $\frac{215}{216}$
19. What is the sum of  $x$ ,  $y$ , and  $z$ ?
- (1)  $2x + y + 3z = 45$   
(2)  $x + 2y = 30$
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
(B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
(C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
(D) EACH statement ALONE is sufficient.  
(E) Statements (1) and (2) TOGETHER are not sufficient.
20. A department store receives a shipment of 1,000 shirts, for which it pays \$9,000. The store sells the shirts at a price 80 percent above cost for one month, after which it reduces the price of the shirts to 20 percent above cost. The store sells 75 percent of the shirts during the first month and 50 percent of the remaining shirts afterward. How much gross income did sales of the shirts generate?
- (A) \$10,000  
(B) \$10,800  
(C) \$12,150  
(D) \$13,500  
(E) \$16,200
21. David has three credit cards: a Passport card, an EverywhereCard, and an American Local card. He owes balances on all three cards. Does he owe the greatest balance on the EverywhereCard?
- (1) The sum of the balances on his EverywhereCard and American Local card is \$1,350, which is three times the balance on his Passport card.  
(2) The balance on his EverywhereCard is  $\frac{4}{3}$  of the balance on his Passport card and  $\frac{4}{5}$  of the balance on his American Local card.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
(B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
(C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
(D) EACH statement ALONE is sufficient.  
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22. Automobile  $A$  is traveling at two-thirds the speed that Automobile  $B$  is traveling. At what speed is Automobile  $A$  traveling?
- (1) If both automobiles increased their speed by 10 miles per hour, Automobile  $A$  would be traveling at three-quarters the speed that Automobile  $B$  would be traveling.
- (2) If both automobiles decreased their speed by 10 miles per hour, Automobile  $A$  would be traveling at half the speed that Automobile  $B$  would be traveling.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
- (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
- (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
- (D) EACH statement ALONE is sufficient.
- (E) Statements (1) and (2) TOGETHER are not sufficient.
23.  $a$  and  $b$  are nonzero integers such that  $0.35a = 0.2b$ . What is the value of  $b$  in terms of  $a$ ?
- (A)  $0.07a$
- (B)  $0.57a$
- (C)  $0.7a$
- (D)  $1.75a$
- (E)  $17.5a$
24. The Binary Ice Cream Shoppe sells two flavors of cones, vanilla and chocolate. On Friday, the ratio of vanilla cones sold to chocolate cones sold was 2 to 3. If the store sold 4 more vanilla cones, the ratio of vanilla cones sold to chocolate cones sold would have been 3 to 4. How many vanilla cones did the store sell on Friday?
- (A) 32
- (B) 35
- (C) 42
- (D) 48
- (E) 54
25. Is integer  $a$  a prime number?
- (1)  $2a$  has exactly three factors.
- (2)  $a$  is an even number.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
- (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
- (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
- (D) EACH statement ALONE is sufficient.
- (E) Statements (1) and (2) TOGETHER are not sufficient.
26. Renee rides her bicycle 20 miles in  $m$  minutes. If she rides  $x$  miles in 10 minutes at the same rate, which of the following is an expression for  $x$ , in terms of  $m$ ?
- (A)  $\frac{m}{200}$
- (B)  $\frac{m}{20}$
- (C)  $\frac{m}{2}$
- (D)  $2m$
- (E)  $\frac{200}{m}$
27. If  $s$  and  $w$  are integers, is  $\frac{w}{5}$  an integer?
- (1)  $4s + 2$  is divisible by 5.
- (2)  $w + 3 = 4s$
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
- (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
- (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
- (D) EACH statement ALONE is sufficient.
- (E) Statements (1) and (2) TOGETHER are not sufficient.

END OF BIN.

**Math Test**  
**Bin 3—Medium-Hard Questions**  
**26 Questions**

**This test is composed of both problem solving questions and data sufficiency questions.**

**Problem Solving Directions:** Solve each problem and choose the best of the answer choices provided.

**Data Sufficiency Directions:** Each data sufficiency problem consists of a question and two statements, labeled (1) and (2), which contain certain data. Using these data and your knowledge of mathematics and everyday facts (such as the number of days in July or the meaning of *counterclockwise*), decide whether the data given are sufficient for answering the question and then indicate one of the following answer choices:

- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
  - (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
  - (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
  - (D) EACH statement ALONE is sufficient.
  - (E) Statements (1) and (2) TOGETHER are not sufficient.
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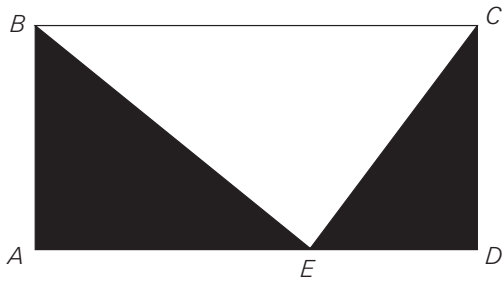
1. An electronics store normally sells all its merchandise at a 10 percent to 30 percent discount from the suggested retail price. During a sale, if the store were to deduct an additional 20 percent from the discounted price, what is the lowest price possible for an item with a suggested retail price of \$260 ?

- (A) \$130.00
- (B) \$145.60
- (C) \$163.80
- (D) \$182.00
- (E) \$210.00

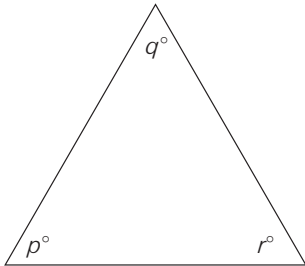
2. A certain gas station discounts the price per gallon of all gasoline purchased after the first 10 gallons by 10 percent. The total per gallon discount for 25 gallons of gas purchased at this station is what percent of the total per gallon discount for 20 gallons of gas?

- (A) 80%
- (B) 100%
- (C) 116.7%
- (D) 120%
- (E) 140%

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3. What is the area of the shaded region in the figure shown above?
- (1) The area of rectangle  $ABCD$  is 54.  
 (2)  $AE = 2ED$
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are not sufficient.



4. For the triangle shown above, does  $p = q = 60$  ?
- (1)  $r = 180 - (p + r)$   
 (2)  $p = 60$
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are not sufficient.

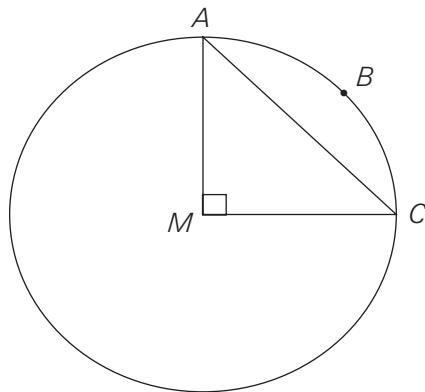
5. During a certain two-week period, a video rental store rented only comedies, dramas, and action movies. If 70 percent of the movies rented were comedies, and of the remaining movies rented, 5 times as many dramas as action movies were rented and  $A$  action movies were rented, then, in terms of  $A$ , how many of the movies rented were comedies?

- (A)  $\frac{A}{14}$   
 (B)  $\frac{5A}{7}$   
 (C)  $\frac{7A}{5}$   
 (D)  $14A$   
 (E)  $35A$

6.  $x$ ,  $y$ , and  $z$  are consecutive positive integers such that  $x < y < z$ . If the units digit of  $x^2$  is 6 and the units digit of  $y^2$  is 9, what is the units digit of  $z^2$ ?

- (A) 0  
 (B) 1  
 (C) 2  
 (D) 4  
 (E) 5

GO ON TO THE NEXT PAGE.



7. What is the area of the circle with center  $M$  shown above?
- (1) The length of  $AC$  is  $8\sqrt{2}$ .  
 (2) The length of arc  $ABC$  is  $4\pi$ .
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are not sufficient.
8. If 70 percent of the female and 90 percent of the male students in the senior class at a certain school are going on the senior trip and the senior class is 60 percent female, what percent of the senior class is going on the senior trip?
- (A) 82%  
 (B) 80%  
 (C) 78%  
 (D) 76%  
 (E) 72%

9. If  $P$  is a set of integers and 3 is in  $P$ , is every positive multiple of 3 in  $P$ ?
- (1) For any integer in  $P$ , the sum of 3 and that integer is also in  $P$ .  
 (2) For any integer in  $P$ , that integer minus 3 is also in  $P$ .
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are not sufficient.
10. A certain seafood restaurant gets a delivery of fresh seafood every day of the week. If the delivery company charges  $d$  dollars per delivery and  $c$  cents per delivered item and the restaurant has an average (arithmetic mean) of  $x$  items delivered per day, then which of the following is an expression for the total cost, in dollars, of one week's deliveries?
- (A)  $\frac{7cdx}{100}$   
 (B)  $d + \frac{7cx}{100}$   
 (C)  $7d + \frac{xc}{100}$   
 (D)  $7d + \frac{7xc}{100}$   
 (E)  $7cdx$

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11. Which of the following contains the interval two standard deviations from the mean of a set of data with an arithmetic mean of 46 and a standard deviation of 4 ?
- (A) 38 to 46  
 (B) 38 to 54  
 (C) 42 to 50  
 (D) 44 to 48  
 (E) 46 to 50
12. If  $a$  and  $b$  are positive integers, is  $a$  a multiple of  $b$  ?
- (1) Every distinct prime factor of  $b$  is also a distinct prime factor of  $a$ .  
 (2) Every factor of  $b$  is also a factor of  $a$ .
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement alone is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are NOT sufficient.
13. If Set  $X$  contains 10 consecutive integers and the sum of the 5 least members of the set is 265, then what is the sum of the 5 greatest members of the set?
- (A) 290  
 (B) 285  
 (C) 280  
 (D) 275  
 (E) 270
14. If  $a - b = c$ , what is the value of  $b$  ?
- (1)  $c + 6 = a$   
 (2)  $a = 6$
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are not sufficient.
- {3, 5, 9, 13,  $y$ }
15. If the average (arithmetic mean) and the median of the set of numbers shown above are equal, then what is the value of  $y$  ?
- (A) 7  
 (B) 8  
 (C) 10  
 (D) 15  
 (E) 17
16. For a certain foot race, how many different arrangements of medal winners are possible?
- (1) Medals will be given for 1st, 2nd, and 3rd place.  
 (2) There are 10 runners in the race.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are not sufficient.

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17. For the set of measurements  $3, x_2, x_3$ , what is the value of  $x_3$ ?
- (1) The range of the set of measurements is 0.  
(2) The standard deviation of the set of measurements is 0.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
(B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
(C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
(D) EACH statement ALONE is sufficient.  
(E) Statements (1) and (2) TOGETHER are not sufficient.
18. An employer has 6 applicants for a programming position and 4 applicants for a manager position. If the employer must hire 3 programmers and 2 managers, what is the total number of ways the employer can make the selection?
- (A) 1,490  
(B) 132  
(C) 120  
(D) 60  
(E) 23
19. On Monday, an animal shelter housed 55 cats and dogs, and by Friday exactly  $\frac{1}{5}$  of the cats and  $\frac{1}{4}$  of the dogs had been adopted. If no new cats or dogs were brought to the shelter during this period, what is the greatest possible number of pets that could have been adopted from the animal shelter between Monday and Friday?
- (A) 11  
(B) 12  
(C) 13  
(D) 14  
(E) 20
20. If  $x$  is an integer, then which of the following statements about  $x^2 - x - 1$  is true?
- (A) It is always odd.  
(B) It is always even.  
(C) It is always positive.  
(D) It is even when  $x$  is even and odd when  $x$  is odd.  
(E) It is even when  $x$  is odd and odd when  $x$  is even.
21. During a five-day period, Monday through Friday, the average (arithmetic mean) high temperature was 86 degrees Fahrenheit. What was the high temperature on Friday?
- (1) The average high temperature for Monday through Thursday was 87 degrees Fahrenheit.  
(2) The high temperature on Friday reduced the average high temperature for the five-day period by 1 degree Fahrenheit.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
(B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
(C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
(D) EACH statement ALONE is sufficient.  
(E) Statements (1) and (2) TOGETHER are not sufficient.

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22. What is the value of  $x^2 - y^2$ ?

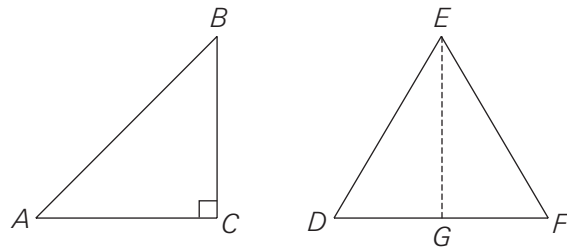
- (1)  $x + y = 0$   
 (2)  $x - y = 2$
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are not sufficient.

23. If  $P$  is the perimeter of an equilateral triangle, which of the following represents the height of the triangle?

- (A)  $\frac{P}{3}$   
 (B)  $\frac{P\sqrt{3}}{3}$   
 (C)  $\frac{P}{4}$   
 (D)  $\frac{P\sqrt{3}}{6}$   
 (E)  $\frac{P}{6}$

24. If 75 percent of all Americans own an automobile, 15 percent of all Americans own a bicycle, and 20 percent of all Americans own neither an automobile nor a bicycle, then what percent of Americans own *both* an automobile and a bicycle?

- (A) 0%  
 (B) 1.33%  
 (C) 3.75%  
 (D) 5%  
 (E) 10%



25. Triangle  $ABC$  above is an isosceles right triangle and triangle  $DEF$  above is an equilateral triangle with height  $EG$ . What is the ratio of the area of  $ABC$  to the area of  $DEF$ ?

- (1) The ratio of  $BC$  to  $EG$  is 1:1.  
 (2) The ratio of  $AC$  to  $DF$  is  $\sqrt{3}:2$ .
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are not sufficient.

26. What is the value of integer  $x$ ?

- (1)  $\sqrt[3]{64} = 4$   
 (2)  $x^2 = x + 6$
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are not sufficient.

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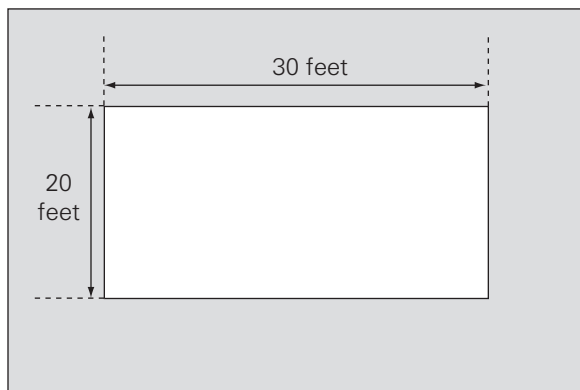
**Math Test**  
**Bin 4—Hard Questions**  
**25 Questions**

**This test is composed of both problem solving questions and data sufficiency questions.**

**Problem Solving Directions:** Solve each problem and choose the best of the answer choices provided.

**Data Sufficiency Directions:** Each data sufficiency problem consists of a question and two statements, labeled (1) and (2), which contain certain data. Using these data and your knowledge of mathematics and everyday facts (such as the number of days in July or the meaning of *counterclockwise*), decide whether the data given are sufficient for answering the question and then indicate one of the following answer choices:

- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
  - (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
  - (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
  - (D) EACH statement ALONE is sufficient.
  - (E) Statements (1) and (2) TOGETHER are not sufficient.
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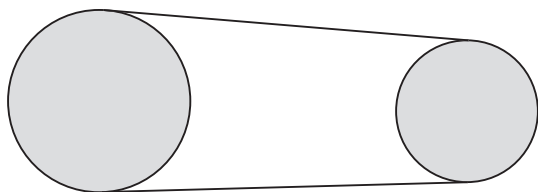
1. A rectangular garden with dimensions 20 feet by 30 feet is surrounded by a rectangular brick walkway of uniform width, as shown by the figure above. If the area of the walkway equals the area of the garden, what is the width of the walkway?
- (A) 1 foot
  - (B) 3 feet
  - (C) 5 feet
  - (D) 8 feet
  - (E) 10 feet

2. If a fair two-sided coin is flipped 6 times, what is the probability that tails is the result at least twice but at most 5 times?
- (A)  $\frac{5}{8}$
  - (B)  $\frac{3}{4}$
  - (C)  $\frac{7}{8}$
  - (D)  $\frac{57}{64}$
  - (E)  $\frac{15}{16}$

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3. The new recruits of a military organization who score in the bottom 16 percent on their physical conditioning tests are required to retest. If the test scores are normally distributed and have an arithmetic mean of 72, what is the score at or below which the recruits are required to retest?
- (1) There are 500 new recruits.
  - (2) 10 new recruits scored at least 82 on the physical conditioning test.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
  - (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
  - (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
  - (D) EACH statement ALONE is sufficient.
  - (E) Statements (1) and (2) TOGETHER are not sufficient.
4. Each of the integers from 1 to 20 is written on a separate index card and placed in a box. If the cards are drawn from the box at random without replacement, how many cards must be drawn to ensure that the product of all the integers drawn is even?
- (A) 19
  - (B) 12
  - (C) 11
  - (D) 10
  - (E) 3
5. The average (arithmetic mean) of integers  $r$ ,  $s$ ,  $t$ ,  $u$ , and  $v$  is 100. Are exactly two of the integers greater than 100 ?
- (1) Three of the integers are less than 50.
  - (2) None of the integers is equal to 100.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
  - (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
  - (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
  - (D) EACH statement ALONE is sufficient.
  - (E) Statements (1) and (2) TOGETHER are not sufficient.
6. Paul jogs along the same route every day at a constant rate for 80 minutes. What distance does he jog?
- (1) Yesterday, Paul began jogging at 5:00 P.M.
  - (2) Yesterday, Paul had jogged 5 miles by 5:40 P.M. and 8 miles by 6:04 P.M.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
  - (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
  - (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
  - (D) EACH statement ALONE is sufficient.
  - (E) Statements (1) and (2) TOGETHER are not sufficient.

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7. The diagram above shows two wheels that drive a conveyor belt. The larger wheel has a diameter of 40 centimeters, and the smaller wheel has a diameter of 32 centimeters. If each wheel must rotate the exact same number of centimeters per minute, and the larger wheel makes  $r$  revolutions per minute, then, in terms of  $r$ , how many revolutions does the smaller wheel make per hour?

- (A)  $\frac{1,280\pi}{3}$   
 (B)  $75r$   
 (C)  $48r$   
 (D)  $24r$   
 (E)  $\frac{64\pi}{3}$

8. An automobile dealership sells only sedans and coupes. It sells each in only two colors: red and blue. Last year, the dealership sold 9,000 vehicles, half of which were red. How many coupes did the dealership sell last year?

- (1) The dealership sold three times as many blue coupes as red sedans last year.  
 (2) The dealership sold half as many blue sedans as blue coupes last year.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are not sufficient.

9. At a college football game,  $\frac{4}{5}$  of the seats in the lower deck of the stadium were sold. If  $\frac{1}{4}$  of all the seats in the stadium are located in the lower deck, and if  $\frac{2}{3}$  of all the seats in the stadium were sold, what fraction of the unsold seats in the stadium are in the lower deck?

- (A)  $\frac{3}{20}$   
 (B)  $\frac{1}{6}$   
 (C)  $\frac{1}{5}$   
 (D)  $\frac{1}{3}$   
 (E)  $\frac{7}{15}$

10. At Company  $R$ , the average (arithmetic mean) age of executive employees is 54 years old and the average age of non-executive employees is 34 years old. What is the average age of all the employees at Company  $R$ ?

- (1) There are 10 executive employees at Company  $R$ .  
 (2) The number of non-executive employees at Company  $R$  is four times the number of executive employees at Company  $R$ .
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are not sufficient.

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11. If  $a$ ,  $b$ ,  $c$ ,  $d$ , and  $x$  are all nonzero integers, is the product  $ax \cdot (bx)^2 \cdot (cx)^3 \cdot (dx)^4$  negative?

- (1)  $a < c < x < 0$   
 (2)  $b < d < x < 0$

- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are not sufficient.

12. A four-character password consists of one letter from the English alphabet and three different digits from 0 to 9. If the letter is the second or third character of the password, how many different passwords are possible?

- (A) 5,040  
 (B) 18,720  
 (C) 26,000  
 (D) 37,440  
 (E) 52,000

13. If  $x$  is a positive integer, is  $x$  divisible by 48?

- (1)  $x$  is divisible by 8.  
 (2)  $x$  is divisible by 6.

- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are not sufficient.

$$\frac{FGF}{\frac{\times G}{HGG}}$$

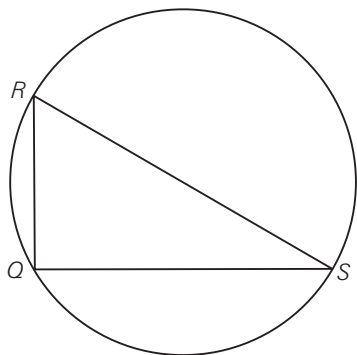
14. In the multiplication problem above,  $F$ ,  $G$ , and  $H$  represent distinct odd digits. What is the value of the three-digit number  $FGF$ ?

- (A) 151  
 (B) 161  
 (C) 171  
 (D) 313  
 (E) 353

15. A group of 20 friends formed an investment club, with each member contributing an equal amount to the general fund. The club then invested the entire fund, which amounted to  $d$  dollars, in Stock  $X$ . The value of the stock subsequently increased 40 percent, at which point the stock was sold and the proceeds divided evenly among the members. In terms of  $d$ , how much money did each member of the club receive from the sale? (Assume that transaction fees and other associated costs were negligible.)

- (A)  $800d$   
 (B)  $\frac{7d}{5}$   
 (C)  $\frac{d}{20} + 40$   
 (D)  $\frac{d}{2}$   
 (E)  $\frac{7d}{100}$

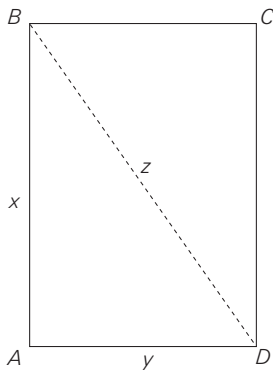
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16. Triangle  $QRS$  is inscribed in a circle as shown above. Is  $QRS$  a right triangle?
- (1)  $RS$  is a diameter of the circle.
  - (2)  $QR = 3$  and  $RS = 5$
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
  - (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
  - (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
  - (D) EACH statement ALONE is sufficient.
  - (E) Statements (1) and (2) TOGETHER are not sufficient.

17. Square  $G$  has sides of length 4 inches. Is the area of Square  $H$  exactly one half the area of Square  $G$ ?
- (1) The length of the diagonal of Square  $H$  equals the length of one side of Square  $G$ .
  - (2) The perimeter of Square  $H$  is twice the length of the diagonal of Square  $G$ .
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
  - (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
  - (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
  - (D) EACH statement ALONE is sufficient.
  - (E) Statements (1) and (2) TOGETHER are not sufficient.
18. In a certain state, 70 percent of the counties received some rain on Monday, and 65 percent of the counties received some rain on Tuesday. No rain fell either day in 25 percent of the counties in the state. What percent of the counties received some rain on Monday and Tuesday?
- (A) 12.5%
  - (B) 40%
  - (C) 50%
  - (D) 60%
  - (E) 67.5%

GO ON TO THE NEXT PAGE.



19.  $ABCD$  is a rectangle with sides of length  $x$  centimeters and width  $y$  centimeters and a diagonal of length  $z$  centimeters. What is the perimeter, in centimeters, of  $ABCD$  ?

- (1)  $x - y = 7$   
 (2)  $z = 13$

- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
 (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
 (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
 (D) EACH statement ALONE is sufficient.  
 (E) Statements (1) and (2) TOGETHER are not sufficient.

20. Together, Andrea and Brian weigh  $p$  pounds and Brian weighs 10 pounds more than Andrea. If Andrea's dog, Cubby, weighs  $\frac{p}{4}$  pounds more than Andrea, then, in terms of  $p$ , what is Cubby's weight in pounds?

- (A)  $\frac{p}{2} - 10$   
 (B)  $\frac{3p}{4} - 5$   
 (C)  $\frac{3p}{2} - 5$   
 (D)  $\frac{5p}{4} - 10$   
 (E)  $5p - 5$

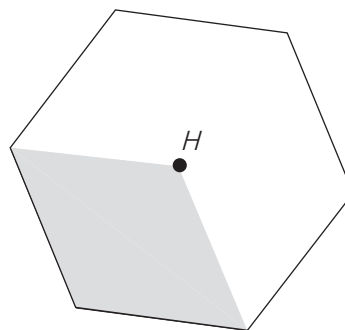
21. A first-grade teacher uses ten flash cards, numbered 1 through 10, to teach her students to order numbers correctly. She has students choose four flash cards at random and arrange the cards in ascending order. If she removes the cards numbered 2 and 4, how many different correctly ordered arrangements of the four selected cards are possible?

- (A) 70  
 (B) 210  
 (C) 336  
 (D) 840  
 (E) 1,680

GO ON TO THE NEXT PAGE.



22. If  $A$  and  $B$  are two-digit integers that share the same digits, except in reverse order, then what is the sum of  $A$  and  $B$ ?
- $A - B = 45$
  - The difference between the two digits in each number is 5.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
- (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
- (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
- (D) EACH statement ALONE is sufficient.
- (E) Statements (1) and (2) TOGETHER are not sufficient.
23. A university awarded grants in the amount of either \$7,000 or \$10,000 to selected incoming freshmen. If the total amount of all such awards is \$2,300,000, did the university award more \$7,000 grants than \$10,000 grants to the selected incoming freshmen?
- A total of 275 freshmen received grants in one of the two amounts.
  - The amount of money awarded in \$10,000 grants was \$200,000 more than the amount of money awarded in \$7,000 grants.
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
- (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
- (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
- (D) EACH statement ALONE is sufficient.
- (E) Statements (1) and (2) TOGETHER are not sufficient.



24. The figure shown above is a regular hexagon with center  $H$ . The shaded area is a parallelogram that shares three vertices with the hexagon and its fourth vertex is the center of the hexagon. If the length of one side of the hexagon is 8 centimeters, what is the area of the unshaded region?
- $16\sqrt{3}$  cm<sup>2</sup>
  - 96 cm<sup>2</sup>
  - $64\sqrt{3}$  cm<sup>2</sup>
  - $96\sqrt{3}$  cm<sup>2</sup>
  - 256 cm<sup>2</sup>
25. A fish tank contains a number of fish, including 5 Fantails. If two fish are selected from the tank at random, what is the probability that both will be Fantails?
- The probability that the first fish chosen is a Fantail is  $\frac{1}{2}$ .
  - The probability that the second fish chosen is a Fantail is  $\frac{4}{9}$ .
- (A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
- (B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
- (C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
- (D) EACH statement ALONE is sufficient.
- (E) Statements (1) and (2) TOGETHER are not sufficient.

END OF BIN.

**Verbal Test**  
**Bin 1—Easy Questions**  
**25 Questions**

**This test is made up of sentence correction, critical reasoning, and reading comprehension questions.**

**Sentence Correction Directions:** Each of the sentence correction questions presents a sentence, part or all of which is underlined. Beneath the sentence you will find five ways of phrasing the underlined part. The first of these repeats the original; the other four are different. Follow the requirements of standard written English to choose your answer, paying attention to grammar, word choice, and sentence construction. Select the answer that produces the most effective sentence; your answer should make the sentence clear, exact, and free of grammatical errors. It should also minimize awkwardness, ambiguity, and redundancy.

**Reading Comprehension Directions:** Each of the reading comprehension questions is based on the content of a passage. After reading the passage, answer all questions pertaining to it on the basis of what is stated or implied in the passage. For each question, select the best answer of the choices given.

**Critical Reasoning Directions:** Each of the critical reasoning questions is based on a short argument, a set of statements, or a plan of action. For each question, select the best answer of the choices given.

- 
1. As its reputation for making acquisitions of important masterpieces has grown, the museum has increasingly turned down gifts of lesser-known paintings they would in the past have accepted gratefully.
- (A) they would in the past have accepted gratefully  
(B) they would have accepted gratefully in the past  
(C) it would in the past have accepted gratefully  
(D) it previously would have accepted gratefully in the past  
(E) that previously would have been accepted in the past
2. Over the past few decades, despite periodic attempts to rein in spending, currencies in South America are devalued by rampant inflation.
- (A) are devalued  
(B) are becoming more devalued  
(C) which have lost value  
(D) have become devalued  
(E) have since become devalued
3. A fashion designer's fall line for women utilizing new soft fabrics broke all sales records last year. To capitalize on her success, the designer plans to launch a line of clothing for men this year that makes use of the same new soft fabrics.
- The designer's plan assumes that
- (A) other designers are not planning to introduce new lines for men utilizing the same soft fabrics  
(B) men will be as interested in the new soft fabrics as women were the year before  
(C) the designer will have time to develop new lines for both men and women  
(D) the line for men will be considered innovative and daring because of its use of fabrics  
(E) women who bought the new line last year will continue to buy it this year

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4. The standard lamp is becoming outmoded, and so too is the incandescent light bulb, it is Edison's miraculous invention to use so much more energy than the new low-wattage halogen bulbs.

- (A) so too is the incandescent light bulb, it is Edison's miraculous invention to use
- (B) so too is the incandescent light bulb, Edison's miraculous invention that uses
- (C) so too the incandescent light bulb, Edison's miraculous invention using
- (D) also the incandescent light bulb, it is Edison's miraculous invention that uses
- (E) also the incandescent light bulb, which is Edison's miraculous invention to use

5. Over the last 20 years, the growth of information technology has been more rapid than any other business field, but has recently begun to lag behind as newly emerging fields seem more enticing to new graduates.

- (A) the growth of information technology has been more rapid than any other business field
- (B) the growth of information technology has been more rapid than any other fields of business
- (C) information technology's growth has been more rapid than any other fields of business
- (D) the growing of information technology has been more rapid than that of any other business field
- (E) the growth of information technology has been more rapid than that of any other business field

6. According to mutual fund sales experts, a successful year for a stock fund should result not only in increased investor dollars flowing into the fund, but also in increased investor dollars flowing into other mutual stock funds offered by the same company. However, while last year the Grafton Mutual Company's "Growth Stock Fund" beat average market returns by a factor of two and recorded substantial new investment, the other stock funds offered by Grafton did not report any increase whatsoever.

Which of the following conclusions can properly be drawn from the statements above?

- (A) When one of the mutual funds offered by a company beats average market returns, the other mutual funds offered by that company will beat average market returns.
- (B) The mutual fund sales experts neglected to consider bond funds in formulating their theory.
- (C) The performance of the Grafton "Growth Stock Fund" was a result of a wave of mergers and acquisitions that year.
- (D) Investors currently dislike all stock mutual funds because of market volatility.
- (E) The success of one mutual fund is not the only factor affecting whether investors will invest in other mutual funds run by the same company.

7. With less than thirty thousand dollars in advance ticket sales and fewer acceptances by guest speakers than expected, the one-day symposium on art and religion was canceled for lack of interest.

- (A) less than thirty thousand dollars in advance ticket sales and fewer
- (B) fewer than thirty thousand dollars in advance ticket sales and less
- (C) fewer than thirty thousand dollars in advance ticket sales and fewer
- (D) lesser than thirty thousand dollars in advance ticket sales and fewer
- (E) less than thirty thousand dollars in advance ticket sales and as few

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8. New technology now makes it feasible for computer call-in help desk services to route calls they receive to almost anywhere, theoretically allowing employees to work from home, without the need for a daily commute.

The adoption of this policy would be most likely to increase productivity if employees did not \_\_\_\_\_.

- (A) commute from a distance of fewer than 10 miles
  - (B) commute by car as opposed to by rail
  - (C) live in areas with dependable phone service
  - (D) need to consult frequently with each other to solve callers' problems
  - (E) have more than one telephone line
9. The port cities of England in the 19<sup>th</sup> century saw a renaissance of ship construction, with some innovative designs breaking new ground, stretching the limits of ship-building theory, and received acclaim from around the world.
- (A) received
  - (B) it received
  - (C) receiving
  - (D) would receive
  - (E) it had received

10. According to a consumer research group survey, the majority of kitchen appliances purchased in the United States are purchased by men. This appears to belie the myth that women spend more time in the kitchen than men.

The argument is flawed primarily because the author \_\_\_\_\_.

- (A) fails to differentiate between buying and using
  - (B) does not provide information about the types of kitchen appliances surveyed
  - (C) depends on the results of one survey
  - (D) does not give exact statistics to back up his case
  - (E) does not provide information on other appliances such as washers and dryers
11. A contribution to a favorite charity being sent instead of flowers when a colleague dies is becoming more the rule than the exception when it comes to funeral etiquette.
- (A) A contribution to a favorite charity being sent instead
  - (B) A contribution being sent to a favorite charity as opposed
  - (C) To send a contribution for a favorite charity instead
  - (D) Sending a contribution to a favorite charity instead
  - (E) Sending a contribution to a favorite charity as opposed

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Questions 12–15 are based on the following passage:

As a business model, the world of publishing has always been a somewhat sleepy enclave, but now all that seems poised to change. Several  
 Line companies have moved aggressively into a new  
 (5) business endeavor whose genesis comes from the question: Who owns the great works of literature?

Text-on-demand is not a completely new idea, of course. In the 1990s, the Gutenberg project sought volunteers to type literary classics that had  
 (10) expired copyrights into word processing files so that scholars would have searchable databases for their research. Most of the works of Shakespeare, Cervantes, Proust, and Molière were to be found free online by as early as 1995.

However, now large-scale companies have moved into the market, with scanners and business plans, and are looking for bargain  
 basement content. These companies are striking deals with libraries, and some publishers, to  
 (20) be able to provide their content, for a price, to individual buyers over the Internet.

At stake are the rights to an estimated store of 30 million books, most of which are now out of print. Many of these books are now also in the  
 (25) public domain, giving any company the right to sell them online. Still, a good portion of the books a general audience might actually want to buy is still under copyright. The urgent question: Who owns those copyrights? In the case of all too  
 (30) many books put out more than 20 years ago by now-defunct publishing companies, the answer is unclear—a situation the new text-on-demand companies are eager to exploit. An association of publishers has sued, claiming massive copyright  
 (35) infringement. The case is several years away from trial.

12. The primary purpose of the passage is to

- (A) present the results of a statistical analysis and propose further study
- (B) explain a recent development and explore its consequences
- (C) identify the reasons for a trend and recommend measures to address it
- (D) outline several theories about a phenomenon and advocate one of them
- (E) describe the potential consequences of implementing a new policy and argue in favor of that policy

13. It can be inferred from the passage that the works of Shakespeare, Cervantes, and Molière
- (A) are some of the most popular works of literature
  - (B) are no longer copyrighted
  - (C) are among the works for which the association of publishers is suing text-on-demand companies
  - (D) do not currently exist as searchable databases
  - (E) were owned by now-defunct publishing companies
14. Which of the following is an example of a book that a text-on-demand company would not have to acquire the rights to?
- (A) A book still under copyright
  - (B) A book more than 20 years old
  - (C) A book in the public domain
  - (D) A book a general audience might want to buy
  - (E) A book not already owned by publishers the company has a deal with
15. It can be inferred from the passage that a common practice of text-on-demand companies is to
- (A) use scanners to find books they want to acquire
  - (B) create business plans well before they have any actual business
  - (C) buy content at premium prices
  - (D) acquire the rights to books for as little as possible
  - (E) attempt to supplant the role of traditional publishers

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16. Exit polls, conducted by an independent organization among voters at five polling locations during a recent election, suggested that the incumbent mayor—a Democrat—was going to lose the election by a wide margin. But, in fact, by the time the final results were tabulated, the incumbent had won the election by a narrow margin.

Which of the following, if true, would explain the apparent contradiction in the results of the exit polls?

- (A) The people chosen at random to be polled by the independent organization happened to be Democrats.
  - (B) The exit poll locations chosen by the independent organization were in predominantly Republican districts.
  - (C) The exit polls were conducted during the afternoon, when most of the districts' younger voters, who did not support the incumbent mayor, were at work.
  - (D) The incumbent mayor ran on a platform that promised to lower taxes if elected.
  - (E) An earlier poll, conducted the week before the election, had predicted that the incumbent mayor would win.
17. The spread of Avian flu from animals to humans has been well-documented, but less understood is the mechanism by which it is spread from one bird species to another. **In order to avoid a worldwide epidemic of Avian flu, scientists must make that study a first priority.** To solely tackle the human dimension of this possible pandemic is to miss half of the problem: its spread from one hemisphere to another.

The bolded phrase plays which of the following roles in the argument above?

- (A) The bolded phrase states a premise of the argument.
- (B) The bolded phrase contradicts the author's main point.
- (C) The bolded phrase makes a statement that the author is about to contradict.
- (D) The bolded phrase states the author's conclusion.
- (E) The bolded phrase states an assumption the author is making.

18. Successful business leaders not only anticipate potential problems and have contingency plans ready, instead proceeding as if they are likely to occur at any time.
- (A) ready, instead proceeding as if they are likely to occur at any time
  - (B) ready, but also proceed as if such problems are likely to occur at any time
  - (C) ready, but also proceeding as if the occurrence of them is at any time likely
  - (D) ready; they instead proceed as if their occurrence is likely at any time
  - (E) ready; such problems are likely to occur at any time, is how they proceed
19. An artist who sells her paintings for a fixed price decides that she must increase her income. Because she does not believe that customers will pay more for her paintings, she decides to cut costs by using cheaper paints and canvases. She expects that, by cutting costs, she will increase her profit margin per painting and thus increase her annual net income.

Which of the following, if true, most weakens the argument above?

- (A) Other area artists charge more for their paintings than the artist charges for hers.
- (B) The artist has failed to consider other options, such as renting cheaper studio space.
- (C) The artist's plan will result in the production of inferior paintings which, in turn, will cause a reduction in sales.
- (D) If the economy were to enter a period of inflation, the artist's projected increase in income could be wiped out by increases in the price of art supplies.
- (E) The artist considered trying to complete paintings more quickly and thus increase production, but concluded that it would be impossible.

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20. Although tapirs reared in captivity are generally docile and have even been kept as pets by South American villagers, it is nonetheless a volatile creature prone to unpredictable and dangerous temper tantrums.

- (A) it is nonetheless a volatile creature
- (B) it is nonetheless volatile creatures
- (C) being nonetheless volatile creatures
- (D) they are nonetheless a volatile creature
- (E) they are nonetheless volatile creatures

21. According to a recent report, the original tires supplied with the Impressivo, a new sedan-class automobile, wore much more quickly than tires conventionally wear. The report suggested two possible causes: (1) defects in the tires and (2) improper wheel alignment of the automobile.

Which of the following would best help the authors of the report determine which of the two causes identified was responsible for the extra wear?

- (A) A study in which the rate of tire wear in the Impressivo is compared to the rate of tire wear in all automobiles in the same class
- (B) A study in which a second set of tires, manufactured by a different company from the one that made the first set, is installed on all Impressivos and the rate of wear is measured
- (C) A study in which the level of satisfaction of workers in the Impressivo manufacturing plant is measured and compared to that of workers at other automobile manufacturing plants
- (D) A study that determines how often improper wheel alignment results in major problems for manufacturers of other automobiles in the Impressivo's class
- (E) A study that determines the degree to which faulty driving techniques employed by Impressivo drivers contributed to tire wear

Questions 22–25 are based on the following passage:

Founded at the dawn of the modern industrial era, the nearly forgotten Women's Trade Union League (WTUL) played an instrumental role in advancing the cause of working women throughout the early part of the twentieth century. In the face of considerable adversity, the WTUL made a contribution far greater than did most historical footnotes.

The organization's successes did not come easily; conflict beset the WTUL in many forms. During those early days of American unions, organized labor was aggressively opposed by both industry and government. The WTUL, which represented a largely unskilled labor force, had little leverage against these powerful opponents. Also, because of the skill level of its workers as well as inherent societal gender bias, the WTUL had great difficulty finding allies among other unions. Even the large and powerful American Federation of Labor (AFL), which nominally took the WTUL under its wing, kept it at a distance. Because the AFL's power stemmed from its highly skilled labor force, the organization saw little economic benefit in working with the WTUL. The affiliation provided the AFL with political cover, allowing it to claim support for women workers; in return, the WTUL gained a potent but largely absent ally.

The WTUL also had to overcome internal discord. While the majority of the group's members were working women, a sizeable and powerful minority consisted of middle- and upper-class social reformers whose goals extended beyond labor reform. While workers argued that the WTUL should focus its efforts on collective bargaining and working conditions, the reformers looked beyond the workplace, seeking state and national legislation aimed at education reform and urban poverty relief as well as workplace issues.

Despite these obstacles, the WTUL accomplished a great deal. The organization was instrumental in the passage of state laws mandating an eight-hour workday, a minimum wage for women, and a ban on child labor. It provided seed money to women who organized workers in specific plants and industries, and it also established strike funds and soup kitchens to support striking unionists. After the tragic Triangle Shirtwaist Company fire of 1911, the WTUL launched a four-year investigation whose

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conclusions formed the basis of much subsequent workplace safety legislation. The organization also offered a political base for all reform-minded women, and thus helped develop the next

(55) generation of American leaders. Eleanor Roosevelt was one of many prominent figures to emerge from the WTUL.

The organization began a slow death in the late 1920s, when the Great Depression choked

(60) off its funding. The organization limped through the 1940s; the death knell eventually rang in 1950, at the onset of the McCarthy era. A turn-of-the-century labor organization dedicated to social

(65) reform, one that during its heyday was regarded by many as “radical,” stood little chance of weathering that storm. This humble ending, however, does nothing to diminish the accomplishments of an organization that is yet to receive its historical due.

22. The primary purpose of this passage is to
- (A) describe the barriers confronting women in the contemporary workplace
  - (B) compare and contrast the methods of two labor unions of the early industrial era
  - (C) critique the methods employed by an important labor union
  - (D) rebuke historians for failing to cover the women’s labor movement adequately
  - (E) call readers’ attention to an overlooked contributor to American history
23. Which of the following best characterizes the American Federation of Labor’s view of the Women’s Trade Union League, as it is presented in the passage?
- (A) The WTUL was an important component of the AFL’s multifront assault on industry and its treatment of workers.
  - (B) Because of Eleanor Roosevelt’s affiliation with the organization, the WTUL was a vehicle through which the AFL could gain access to the White House.
  - (C) The WTUL was to be avoided because the radical element within it attracted unwanted government scrutiny.
  - (D) The WTUL offered the AFL some political capital but little that would assist it in labor negotiations.
  - (E) The WTUL was weakened by its hesitance in pursuing widespread social reform beyond the workplace.

24. Each of the following is cited in the passage as an accomplishment of the Women’s Trade Union League EXCEPT
- (A) it organized a highly skilled workforce to increase its bargaining power
  - (B) it contributed to the development of a group of leaders in America
  - (C) it provided essential support to striking women
  - (D) it helped fund start-up unions for women
  - (E) it contributed to the passage of important social and labor reform legislation
25. The passage suggests which of the following about the “middle- and upper-class social reformers” mentioned in lines 32–33 ?
- (A) They did not understand, nor were they sympathetic to, the plight of poor women workers.
  - (B) Their naive interest in Communism was ultimately detrimental to the Women’s Trade Union League.
  - (C) It was because of their social and political power that the Women’s Trade Union League was able to form an alliance with the American Federation of Labor.
  - (D) They represented only an insignificant fraction of the leadership of Women’s Trade Union League.
  - (E) They sought to advance a broad political agenda of societal improvement.

END OF BIN.



**Verbal Test**  
**Bin 2—Medium Questions**  
**27 Questions**

**This test is made up of sentence correction, critical reasoning, and reading comprehension questions.**

**Sentence Correction Directions:** Each of the sentence correction questions presents a sentence, part or all of which is underlined. Beneath the sentence you will find five ways of phrasing the underlined part. The first of these repeats the original; the other four are different. Follow the requirements of standard written English to choose your answer, paying attention to grammar, word choice, and sentence construction. Select the answer that produces the most effective sentence; your answer should make the sentence clear, exact, and free of grammatical errors. It should also minimize awkwardness, ambiguity, and redundancy.

**Reading Comprehension Directions:** Each of the reading comprehension questions is based on the content of a passage. After reading the passage, answer all questions pertaining to it on the basis of what is stated or implied in the passage. For each question, select the best answer of the choices given.

**Critical Reasoning Directions:** Each of the critical reasoning questions is based on a short argument, a set of statements, or a plan of action. For each question, select the best answer of the choices given.

- 
1. As its performance has risen on all the stock indexes, the bio-tech start-up has branched out into new markets to look for opportunities they would previously have had to ignore.
- (A) they would previously have had to ignore  
(B) they would have had to ignore previously  
(C) that previously they would have had to ignore  
(D) it previously would have had to ignore in past years  
(E) it would previously have had to ignore

2. Scientists wishing to understand the kinetic movements of ancient dinosaurs are today studying the movements of modern-day birds, which many scientists believe are descended from dinosaurs. A flaw in this strategy is that birds, although once genetically linked to dinosaurs, have evolved so far that any comparison is effectively meaningless.

Which of the following, if true, would most weaken the criticism made above of the scientists' strategy?

- (A) Birds and dinosaurs have a number of important features in common that exist in no other living species.  
(B) Birds are separated from dinosaurs by 65 million years of evolution.  
(C) Our theories of dinosaur movements have recently undergone a radical reappraisal.  
(D) The study of kinetic movement is a relatively new discipline.  
(E) Many bird experts do not study dinosaurs to draw inferences about birds.

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3. A factory in China has two options to improve efficiency: adding robotic assembly lines and subcontracting out certain small production goals that could be done more efficiently elsewhere. Adding robotic assembly lines will improve efficiency more than subcontracting some small production goals. Therefore, by adding robotic assembly lines, the factory will be doing the most that can be done to improve efficiency.

Which of the following is an assumption on which the argument depends?

- (A) Adding robotic assembly lines will be more expensive than subcontracting some small production goals.
- (B) The factory has a choice of robotic assembly lines, some of which might be better suited to this factory than others.
- (C) The factory may or may not decide to choose either alternative.
- (D) Efficiency cannot be improved more by using both methods together than by adding robotic assembly lines alone.
- (E) This particular factory is already the third most efficient factory in China.
4. Just as the early NASA space explorers attempted on each flight to push the frontiers of our knowledge, so too are the new private-consortium space explorers seeking to add to man's general understanding of the cosmos.
- (A) Just as the early NASA space explorers attempted on each flight to push the frontiers of our knowledge, so too
- (B) The early NASA space explorers attempted on each flight to push the frontiers of our knowledge, and in the same way
- (C) Like the case of the early NASA space explorers who attempted on each flight to push the frontiers of our knowledge, so too
- (D) As in the early NASA space explorers' attempts on each flight to push the frontiers of our knowledge, so too
- (E) Similar to the early NASA space explorers attempted on each flight to push the frontiers of our knowledge, so too

5. A proposal for a new building fire safety code requires that fire-retardant insulation no longer be sprayed on steel girders in the factory, but be sprayed on once the girders have arrived at the building site. This will eliminate the dislodging of the insulation in transit and reduce fatalities in catastrophic fires by an estimated 20%.

Which of the following, if true, represents the strongest challenge to the new proposal?

- (A) The fire-retardant insulation will also be required to be one inch thicker than in the past.
- (B) Studies have shown that most dislodgement of insulation occurs after the girders arrive on site.
- (C) Catastrophic fires represent only 4% of the fires reported nationally.
- (D) The proposed safety code will add considerably to the cost of new construction.
- (E) In most of Europe, spraying fire-retardant insulation onto steel girders at the building site has been required for the past ten years.
6. An effort to control the crippling effects of poverty in Brazil's interior cities, begun almost thirty years ago, has been partially successful, despite the setback of a major drought and the interruption of aid during an extended economic crisis.
- (A) to control the crippling effects of poverty in Brazil's interior cities, begun almost thirty years ago,
- (B) begun almost thirty years ago for controlling the crippling effects of poverty in Brazil's interior cities,
- (C) begun for controlling the crippling effects of poverty in Brazil's interior cities almost thirty years ago,
- (D) at controlling the crippling effects of poverty in Brazil's interior cities begun almost thirty years ago,
- (E) that has begun almost thirty years ago to control the crippling effects of poverty in Brazil's interior cities,

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7. A newly discovered disease is thought to be caused by a certain bacterium. However, recently released data note that the bacterium thrives in the presence of a certain virus, implying that it is actually the virus that causes the new disease.

Which of the following pieces of evidence would most support the data's implication?

- (A) In the absence of the virus, the disease has been observed to follow infection by the bacterium.
- (B) The virus has been shown to aid the growth of bacteria, a process which often leads to the onset of the disease.
- (C) The virus alone has been observed in many cases of the disease.
- (D) In cases where the disease does not develop, infection by the bacterium is usually preceded by infection by the virus.
- (E) Onset of the disease usually follows infection by both the virus and the bacterium.

8. The company was not even publicly traded until 1968, when the owner and founder sold it to David P. Markham, a private investor, who took the company public and established a long and generous policy of stock options for valued employees.

- (A) who took the company public and established a long and generous policy of stock options for
- (B) who, taking the company public, established a long and generous policy of stock options to
- (C) who, when he took the company public, established a long and generous policy of stock options to
- (D) who had taken the company public, establishing a long and generous policy of stock options as
- (E) taking the company public and establishing a long and generous policy of stock options for

9. Because of a quality control problem, a supplier of flu vaccines will not be able to ship any supplies of the vaccine for the upcoming flu season. This will create a shortage of flu vaccines and result in a loss of productivity as workers call in sick.

Which of the following, if true, most seriously weakens the argument above?

- (A) The quality control problem of the supplier is not as severe as some experts had initially predicted.
- (B) Other suppliers of flu vaccine have not been affected by the quality control problem.
- (C) Last year there was also a shortage of flu vaccine available.
- (D) The price of flu vaccines is expected to fall in the next ten years.
- (E) The flu season is expected to last longer than usual this year.

10. Never before had the navy defeated so many foes at once as it had in the battle of Trafalgar in 1805.

- (A) so many foes at once as it had in
- (B) at once as many foes as
- (C) at once as many foes that there were in
- (D) as many foes at once as it did in
- (E) so many foes at once as that it defeated in

11. The changes that may be part of a general global warming trend include an increase in the frequency and severity of hurricanes, a gradual rise in sea level, depleting the ozone layer, and raising the temperature of the Earth.

- (A) depleting the ozone layer, and raising the temperature of the Earth
- (B) depleting the ozone layer, and a rise in the Earth's temperature
- (C) a depletion of the ozone layer, and raising the Earth's temperature
- (D) a depletion of the ozone layer, and a raise of the temperature of the Earth
- (E) a depletion of the ozone layer, and a rise in the temperature of the Earth

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Questions 12–16 are based on the following passage:

Line It has long been a tenet of business theory  
 (5) that the best decisions are made after careful  
 review and consideration. Only after weighing all  
 the options and studying projections, say most  
 professors of business, can a practical decision be  
 made.

(10) Now, that model is being questioned by some  
 business thinkers in the light of the theories of  
 Malcolm Gladwell, who states that human beings  
 often make better decisions in the blink of an eye.

(15) It is, at first glance, a theory so counter-  
 intuitive as to seem almost ludicrous. Behind any  
 decision, Gladwell posits, there is a behind-the-  
 scenes subconscious process in which the brain  
 analyzes; ranks in order of importance; compares  
 and contrasts vast amounts of information; and  
 dismisses extraneous factors, seemingly almost  
 instantaneously, often arriving at a conclusion  
 in less than two seconds. Citing a multitude of  
 (20) studies and examples from life, Gladwell shows  
 how that split-second decision is often better  
 informed than a drawn-out examination.

(25) Evanston and Cramer were the first to apply  
 this theory to the business world. Evanston  
 videotaped the job interviews of 400 applicants at  
 different firms. He then played only 10 seconds of  
 each videotape to independent human resources  
 specialists. The specialists were able to pick out  
 the applicants who were hired with an accuracy of  
 (30) over 90%.

Cramer took the experiment even further, using  
 only five seconds of videotape, without sound.  
 To his astonishment, the rate of accuracy with  
 which the HR specialists were able to predict the  
 (35) successful applicants fell only to 82%.

(40) Critics argue that these results illustrate a  
 problem with stereotyping that impedes human  
 resources specialists from hiring the best  
 candidates even when they have the time to  
 get below the surface: going for the candidate  
 who “looks the part.” Gladwell argues that, on  
 the contrary, the human mind is able to make  
 complicated decisions quickly and that intuition  
 often trumps an extended decision-making  
 (45) process.

12. The primary purpose of the passage is to
- (A) discuss reasons an accepted business theory is being reexamined
  - (B) present evidence that resolves a contradiction in business theory
  - (C) describe a tenet of business practices and how that tenet can be tested in today’s economic environment
  - (D) argue that a counter-intuitive new business idea is, in the final analysis, incorrect
  - (E) present evidence that invalidates a new business model
13. According to the passage, all of the following are examples of the subconscious processes by which the brain makes a decision EXCEPT
- (A) analysis of information
  - (B) ranking of information
  - (C) comparison and contrast of information
  - (D) rejecting information that is not pertinent
  - (E) consulting a multitude of studies and examples
14. The author’s attitude toward the long-held view that decisions should be made carefully over time expressed in lines 1–5 can best be described as
- (A) dismissive and scornful
  - (B) respectful but questioning
  - (C) admiring and deferential
  - (D) uncertain but optimistic
  - (E) condescending and impatient

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15. The author most likely mentions the results of Cramer's extension of Evanston's experiment in order to
- (A) show that Cramer's hypothesis was correct, while Evanston's hypothesis turned out to be incorrect
  - (B) show that Evanston's hypothesis was correct, while Cramer's hypothesis turned out to be incorrect
  - (C) demonstrate that while both experiments were scientifically rigorous, neither ended up being scientifically valid
  - (D) illustrate that the principle of subconscious decisions continues to work even when less information is available
  - (E) demonstrate that Cramer's experiment was 8% more accurate than Evanston's, even though his subjects had less information to work with

16. It can be inferred that the critics referred to in line 36 believed the results of the two experiments had less to do with the innate decision-making of the subjects than with
- (A) the excellent decision-making of Evanston and Cramer
  - (B) the expertise of Malcolm Gladwell, who originated the theory
  - (C) not choosing candidates who "looked the part"
  - (D) the use of videotape as a method of choosing candidates
  - (E) their unconscious use of visual stereotypes in making their selections

17. The women's volleyball team at a local college finished fifth in its division, prompting the college to fire the team's general manager. The manager responded by suing the college, saying that the team's performance put it among the top teams in the country.

Which of the following statements, if true, would support the claim of the team's manager, and resolve the apparent contradiction?

- (A) The team won all of its "away" games during the season in question.
  - (B) Attendance at the volleyball team's games was up 35% from the year before.
  - (C) Of the starting team, three team members were unable to play for at least half the season because of injuries.
  - (D) There are 80 teams in this particular volleyball team's division.
  - (E) The team lost more games this year than it did the year before.
18. Country A recently broke off diplomatic relations with Country B when it was reported that Country B had been running a covert intelligence operation within the borders of Country A. While a spokesperson for Country B admitted the charge, the spokesperson said that it was common knowledge that all countries do this, and that Country A was no exception.
- Which of the following inferences can be drawn from the argument above?
- (A) Country B should apologize and dismantle its intelligence operation in Country A.
  - (B) The spokesperson for Country B claims that Country A engages in intelligence gathering too.
  - (C) Because all countries engage in this practice, Country A's outrage was disingenuous.
  - (D) Relations between Country A and Country B will be strained for some time.
  - (E) Country B would be just as outraged if it was reported that Country A was running a covert intelligence operation with Country B's borders.

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19. Because cellular telephones emit signals that can interfere with cockpit-to-control tower transmissions, airplane passengers' use of these instruments at all times that the airplane is in motion, even while on the ground, are prohibited.
- (A) at all times that the airplane is in motion, even while on the ground, are
- (B) at all times during which the airplane, even while on the ground, is in motion, are
- (C) during airplane motion, even when it is on the ground, are
- (D) during times of the airplane being in motion, even on the ground, is
- (E) when the airplane is in motion, even while on the ground, is
20. In contrast to classical guitars, whose owners prefer the dulcet, rounded tones produced by nylon strings, folk guitar owners prefer the bright and brassy sound that only bronze or steel can create.
- (A) folk guitar owners prefer the bright and brassy sound
- (B) folk guitar owners prefer to get a sound that is bright and brassy
- (C) with a folk guitar, the owner gets the preferably bright and brassy sound
- (D) folk guitars produce a bright and brassy sound, which their owners prefer,
- (E) folk guitars produce a preferred bright and brassy sound for their owners

Questions 21–22 are based on the following passage:

A system-wide county school anti-smoking education program was instituted last year. The program was clearly a success. Last year, the incidence of students smoking on school premises decreased by over 70 percent.

21. Which of the following assumptions underlies the argument in the passage?
- (A) Cigarettes are detrimental to one's health; once people understand this, they will quit smoking.
- (B) The doubling of the price of a pack of cigarettes last year was not the only cause of the students' altered smoking habits.
- (C) The teachers chosen to lead the anti-smoking education program were the most effective teachers in the school system.
- (D) The number of cigarettes smoked each day by those students who continued to smoke last year did not greatly increase.
- (E) School policy enforcers were less vigilant in seeking out smokers last year than they were in previous years.
22. Which of the following, if true, would most seriously weaken the argument in the passage?
- (A) The author of this statement is a school system official hoping to generate good publicity for the anti-smoking program.
- (B) Most students who smoke stopped smoking on school premises last year continued to smoke when away from school.
- (C) Last year, another policy change made it much easier for students to leave and return to school grounds during the school day.
- (D) The school system spent more on anti-smoking education programs last year than it did in all previous years.
- (E) The amount of time students spent in anti-smoking education programs last year resulted in a reduction of in-class hours devoted to academic subjects.

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23. Mild exercise throughout pregnancy may reduce the discomfort associated with pregnancy and result in a speedier, easier birth, according to a recent study.

- (A) may reduce the discomfort associated with pregnancy and result in
- (B) may reduce the discomfort associated with pregnancy, with the result
- (C) may cause a reduction in the discomfort associated with pregnancy and as a result
- (D) might lead to a reduction in the discomfort associated with pregnancy and as a result
- (E) might reduce the discomfort associated with pregnancy and resulting in

Questions 24–27 are based on the following passage:

Line  
 (5) What is it that keeps the developing world in an apparent state of perpetual poverty? Poor education, lack of basic medical care, and the absence of democratic structures all certainly contribute to these nations' plight. However, according to Peruvian economist Hernando de Soto, the overriding cause is the overwhelming prevalence of black market activity, well outside the formal economy, in these countries. The losses  
 (10) incurred from this condition are twofold. First, they deny the government tax revenues which could be used to improve education, medical treatment, and government efficiency. More important, however, they deny earners the chance to accumulate assets  
 (15) recognized by law and thus prevent them from leveraging those assets to borrow. Reforming these nations' legal systems in order to confer ownership through titling, De Soto argues, would help the poor there access the assets their work  
 (20) should be generating. These assets could then be used to buy homes and construct businesses, thus building a more stable and prosperous economy. De Soto estimates the value of these assets, which he terms "dead capital," at nearly \$10 trillion  
 (25) worldwide.

De Soto is not the first to locate the developing world's problems in the domain of property rights. Others have tried property rights reform and failed. According to de Soto, this is because  
 (30) his predecessors attempted to model their plans on existing, successful property rights systems. In other words, they tried to transplant American and British property law to an inhospitable host. De Soto argues that within many of the extralegal  
 (35) markets of the developing world, mutually agreed-upon rules for distributing assets and recognizing property rights already exist. Rather than force these markets to adjust to a new, foreign system of property titling, reformers should focus on  
 (40) codifying the existing systems wherever it is practical to do so. This would facilitate a quicker, more natural transition to an economy that builds wealth rather than squanders it.

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24. The author's primary goal in the passage is to
- (A) compare several failed attempts to address a problem
  - (B) respond to criticism of a new theory
  - (C) identify the problems inherent in a new economic theory
  - (D) describe a novel approach to an old problem
  - (E) compare different property rights systems in the industrial world
25. According to the passage, de Soto believes that the quickest way to address poverty in the developing world is to
- (A) increase funding for education
  - (B) build the infrastructure to support lending
  - (C) ensure medical care for all citizens
  - (D) aggressively root out corruption in government
  - (E) increase tax rates on all citizens in developing countries
26. The author's assertion that "reformers should focus on codifying the existing systems wherever it is practical to do so" (lines 39–41) suggests that
- (A) in some instances, current systems are inadequate to meet the needs of a market economy
  - (B) these systems are already written down and need only be enacted as law
  - (C) where it is impractical to codify existing systems, countries should adopt American property law
  - (D) the existing systems are superior to those currently in use in modern industrialized countries
  - (E) improving education and medical care in these countries should take priority over reforming property laws
27. The term "dead capital" (line 24) refers to
- (A) loans that are never repaid
  - (B) failed investments in new businesses
  - (C) cities ruined by over-industrialization
  - (D) the proceeds of extralegal commerce
  - (E) property passed from generation to generation

END OF BIN.



**Verbal Test**  
**Bin 3—Hard Questions**  
**26 Questions**

**This test is made up of sentence correction, critical reasoning, and reading comprehension questions.**

**Sentence Correction Directions:** Each of the sentence correction questions presents a sentence, part or all of which is underlined. Beneath the sentence you will find five ways of phrasing the underlined part. The first of these repeats the original; the other four are different. Follow the requirements of standard written English to choose your answer, paying attention to grammar, word choice, and sentence construction. Select the answer that produces the most effective sentence; your answer should make the sentence clear, exact, and free of grammatical errors. It should also minimize awkwardness, ambiguity, and redundancy.

**Reading Comprehension Directions:** Each of the reading comprehension questions is based on the content of a passage. After reading the passage, answer all questions pertaining to it on the basis of what is stated or implied in the passage. For each question, select the best answer of the choices given.

**Critical Reasoning Directions:** Each of the critical reasoning questions is based on a short argument, a set of statements, or a plan of action. For each question, select the best answer of the choices given.

- 
- |   |  |
|---|--|
| <p>1. Unlike <u>Franklin D. Roosevelt's bootstrap program that helped</u> to restart economic growth in the 1930s through public works, Ronald Reagan proposed a program of trickle-down economics to restart the economy.</p> <p>(A) Franklin D. Roosevelt's bootstrap program that helped</p> <p>(B) Franklin D. Roosevelt and his bootstrap program which helped</p> <p>(C) Franklin D. Roosevelt, whose bootstrap program helped</p> <p>(D) the bootstrap program of Franklin D. Roosevelt that has helped</p> <p>(E) Franklin D. Roosevelt and his bootstrap program helping</p> | <p>2. In the 1970s, it became evident <u>that writing about someone else's research was much easier for social scientists who wanted to make a quick name for themselves</u> than it was to do their own research.</p> <p>(A) that writing about someone else's research was much easier for social scientists who wanted to make a quick name for themselves</p> <p>(B) that for social scientists who wanted to make a quick name for themselves, it was much easier to write about someone else's research</p> <p>(C) that for social scientists wanting to make a quick name for themselves, writing about someone else's research was much easier</p> <p>(D) for social scientists who wanted to make a quick name for themselves that writing about someone else's research was much easier</p> <p>(E) for social scientists who wanted to make a quick name for themselves, writing about someone else's research was much easier</p> |
|---|--|

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Questions 3–4 are based on the following passage:

To improve the town's overcrowded school system, the town council has proposed an ambitious education plan to reduce classroom size and make capital improvements—a plan they intend to pay for with an increase in property taxes for homes valued over \$500,000. Although the school system desperately needs improving, the town council's plan should be defeated because the majority of the people who would end up paying for the improvements receive no benefit from them.

3. Which of the following, if true, most strengthens the argument above?
- (A) The town's school system is currently ranked among the worst in the state.
  - (B) Other towns nearby that have made similar capital improvements did not find that the improvements translated to a better quality of education.
  - (C) The town will need to spend additional money on an architect's plans for the capital improvements.
  - (D) An examination of the tax rolls shows that most homeowners in this category no longer have school-age children.
  - (E) Some homeowners will delay home improvement projects in order to keep the value of their homes below \$500,000.
4. Which of the following, if true, provides the town council with the strongest counter to the objection that its plan is unfair?
- (A) Even with the proposed increase, property taxes in the town are well below the national average.
  - (B) Paying for the school system improvements using existing town funds will result in shortfalls that will force the town into arrears.
  - (C) The teachers in the town's school system receive some of the lowest salary packages in the immediate area, which is a major cause of attrition.
  - (D) Smaller class sizes and capital improvements in a school system tend to increase property values in the surrounding community.
  - (E) A feasibility study has shown that the cost of the improvements will likely be 20% higher than projected.
5. The rules of engagement under which a border patrol station can decide to use deadly force includes responding to an invasionary incursion and the return of hostile fire.
- (A) includes responding to an invasionary incursion and the return of
  - (B) includes responding to an invasionary incursion and returning
  - (C) include responding to an invasionary incursion and the return of
  - (D) include a response to an invasionary incursion and the return of
  - (E) include a response to an invasionary incursion and returning
6. Although the word "phonetician" is popularly associated with Henry Higgins's task of improving the diction of Eliza Doolittle in *My Fair Lady*, in linguistics, it is someone who studies the formation of language.
- (A) it is someone who studies
  - (B) it is a person studying
  - (C) it refers to someone who studies
  - (D) they are people who study
  - (E) it is in reference to people who study

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7. Experts studying patterns of shark attacks on humans have noted that attacks tend to diminish when the water temperature drops below 65 degrees Fahrenheit. Until recently, researchers believed this was because sharks prefer warmer water, and thus are present in fewer numbers in colder water. However, new research shows that sharks are present in equal numbers in cold and warm water.

Which of the following, if true, best explains the apparent paradox?

- (A) In general, humans prefer warm water.
  - (B) Sharks' keen sense of smell is enhanced in cold water.
  - (C) In the Pacific, shark attacks tend to occur more frequently in the daytime.
  - (D) Of the more than 200 types of sharks present in the ocean, only three attack humans.
  - (E) The average temperature of the Earth's oceans is 55 degrees.
8. As a result of surging economic indicators, most analysts upgraded the company's stock to a strong "buy," ignoring the advice of the head of a watchdog organization who warned that the company's product would prove not only dangerous but ineffective in the long run.
- (A) who warned that the company's product would prove not only dangerous but
  - (B) warning that the company's product would prove not only dangerous and also
  - (C) warning that the company's product would prove itself to be both dangerous and
  - (D) who warned that the company's product would prove to be both dangerous and
  - (E) who was warning that the company's product would prove not only dangerous but

9. MoviesNow! streaming service is projected to buy more licenses to stream more movies in the next 5 years than in any previous 5-year window. This is because MoviesNow!'s board of directors has encouraged the pursuit of subscribers who are parents of children under the age of 12 and the current selection of movies to stream in the MoviesNow! database is targeted at subscribers ages 18–35.

Which of the following, if true, would most strengthen the argument from MoviesNow!'s board of directors that they should pursue subscribers who are parents of children under the age of 12?

- (A) The board monitors the demographic targets of large advertising companies and chooses target audiences for their streaming service based on those trends.
  - (B) A population study conducted by an independent research group has uncovered a large uptick in the number of parents who are raising children under the age of 12.
  - (C) People aged 18–35 generally have less disposable income than other age demographics.
  - (D) The licensing agreement MoviesNow! has with the largest movie production company is set to expire within the next 5 years.
  - (E) The board of MoviesNow! is comprised of parents of children under the age of 12.
10. A new influx of unprecedented private investment should create a bright new future for crewed space exploration, making the possibility of commercial space tourism much more viable than 10 years ago.
- (A) making the possibility of commercial space tourism much more viable than 10 years ago
  - (B) and make the possibility of commercial space tourism much more viable than 10 years ago
  - (C) making the possibility of commercial space tourism much more viable than it was 10 years ago
  - (D) and make the possibility of commercial space tourism much more viable than it was 10 years in the past
  - (E) making the possibility of commercial space tourism much more viable than 10 years in the past

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Questions 11–15 are based on the following passage:

Line As the American workforce gets grayer, age  
discrimination will likely become a more prominent  
issue in the courts. It is, of course, illegal to  
(5) discriminate against an employee because of the  
employee’s age, and yet it is not illegal to dismiss a  
worker because he has a high salary and expensive  
health care.

(10) This apparent contradiction is at the heart of a  
raft of cases now making their way through the  
courts. The outcome of these cases will have  
broad implications for the workplace in the coming  
years. By 2020, the Bureau of Labor Statistics has  
projected that more than half of all workers will be  
over 40—many of whom, by dint of seniority and  
(15) promotions, will be earning higher than median  
salaries, eligible for more stock options, and  
carrying higher health care costs as a result of a  
larger number of dependents and the increased  
cost of health care for older workers.

(20) Is it any wonder that a bottom-line oriented  
business might want to shed these workers,  
whose productivity is likely to plummet in the next  
few years, even as they become more expensive  
employees?

(25) Still, the legal challenges of implementing this  
policy are daunting. Businesses have the right to  
rate workers on their productivity and to rank them  
against their peers. But they are not allowed to  
prejudge individuals based on their sex, race, or  
(30) age. Each worker must be treated on the worker’s  
own merits, rather than by how they fit into a larger  
profile of the group they belong to.

(35) For companies looking to lay off these workers,  
the cost of making a mistake is high; while only  
one in three age discrimination suits is won by  
the plaintiff, the awards tend to be steep and the  
political fall-out harsh.

11. The primary purpose of the passage is to
- (A) advocate on behalf of the older American worker who could soon face dismissal
  - (B) describe the origin of two theories of labor law and their effects on the workplace
  - (C) present an overview of the legal ramifications of a practice some call discriminatory
  - (D) describe the process by which America’s workforce is getting older
  - (E) describe the methods by which a company could reduce its bottom line
12. Which of the following best describes the organization of the second paragraph of the passage?
- (A) An assertion is made and then briefly contradicted.
  - (B) A contradiction is stated and then quickly resolved.
  - (C) A new theory is described and then qualified.
  - (D) An apparent inconsistency is stated and its consequences outlined.
  - (E) A conventional model is described and an alternative is introduced.
13. Which of the following, if true, would most effectively weaken the author’s assertion that a “bottom-line oriented business” might want to lay off older workers?
- (A) A new study shows that, on average, younger workers earn less and have lower associated medical costs than older workers.
  - (B) Older workers have a higher rate of absenteeism than younger workers.
  - (C) A new study shows that older workers are in fact more productive and have fewer medical expenses compared to younger workers.
  - (D) A forecasted downturn in the economy will erode profits in many American businesses.
  - (E) A new bill scheduled to become law will make it easier for employers to employ undocumented immigrants.

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14. It can be inferred from the passage regarding the relationship between American companies and older Americans that
- (A) what is good for American companies is not necessarily good for older Americans
  - (B) American companies are prohibited by law from practices that discriminate based on age
  - (C) large monetary judgments from age discrimination suits might prove more expensive than paying older employees' salaries
  - (D) by the year 2030, the percentage of older employees will be even higher than in the year 2020
  - (E) some older employees may well be more productive than some younger employees
15. The author mentions all of the following as driving up the cost to employers for employing workers over the age of 40 EXCEPT
- (A) the cost of out-placement services
  - (B) a larger number of dependents
  - (C) increased cost of health care
  - (D) higher median salaries
  - (E) the cost of employee stock options
16. A pharmaceutical company claims that its new drug promotes learning in children. To back up its claims, the company points to a study of 300 children who were given the drug, along with a control group of 300 children who were given a placebo. The 300 children who were given the drug reported that they were able to retain new information much more easily.
- Which of the following statements, if true, would most tend to weaken the claims of the pharmaceutical company?
- (A) The 300 children in the control group also reported that they were able to retain new information much more easily.
  - (B) The drug has also been shown to prevent common skin rashes.
  - (C) The drug has been proven to have severe side-effects.
  - (D) The children in the study were not given any other medications during the study.
  - (E) The children who were given the drug did better on cognitive measurement tests after the drug therapy than before.
17. In order to understand the dangers of the current real-estate bubble in Country Y, one has only to look to the real-estate bubble of the last decade in Country Z. In that country, incautious investors used the inflated value of their real estate as collateral in risky margin loans. When the real-estate market collapsed, many investors went bankrupt, creating a major recession. Country Y is in real danger of a similar recession if more-stringent laws restricting margin loans are not enacted promptly.
- The answer to which of the following questions would be most useful in evaluating the significance of the author's claims?
- (A) Was the real estate in Country Z located principally in rural areas or was it located in more urban communities?
  - (B) Could the bankruptcies in Country Z have been prevented by a private bailout plan by the nation's banks?
  - (C) Does Country Y currently have any laws on its books regarding margin loans?
  - (D) Are there business ties and connections between Country Y and Country Z?
  - (E) Were there other factors in the case of Country Y that would make the comparison with Country Z less meaningful?
18. Rules governing participation in a new extreme sports fantasy camp require that applicants should be physically fit enough to endure the demanding activities in which they will be engaging.
- (A) that applicants should be physically fit enough to endure the demanding
  - (B) that applicants be physically fit enough to endure the demanding
  - (C) applicants should have enough physical fitness to allow enduring the demands of
  - (D) applicants are physically fit enough as to endure the demands of
  - (E) physical fitness in applicants, enough for endurance of demanding

GO ON TO THE NEXT PAGE.

19. During the summer of 2002, the Outer Banks suffered a massive toad infestation, discouraging many vacationers from visiting the area.

- (A) suffered a massive toad infestation, discouraging
- (B) suffered from a massive toad infestation and discouraging
- (C) suffered a massive infestation of toads, which discouraged
- (D) was suffering a massive infestation of toads and discouraging
- (E) had suffered from a massive toad infestation and this discouraged

20. A prolonged period of low mortgage rates resulted in a period of the most robust home sales ever. At the same time, the average sale price of resale homes actually dropped, when adjusted for inflation.

Which of the following, if true, would explain the apparent contradiction between the robust home sales and the drop in the average sale price of resale homes?

- (A) The inflation rate during this period exceeded the increase in the average salary, thus preventing many buyers from securing mortgages.
- (B) Resale homes represent the best value on the real estate market.
- (C) Without the adjustment for inflation, the price of resale homes actually increased by a very slight amount.
- (D) The decrease in mortgage rates was accompanied by a widening of the types of mortgages from which borrowers could choose.
- (E) The increase in home sales was due entirely to an increase in the sale of new homes.

21. Luis is taller than Rei. Kiko is taller than Marcus. Therefore, Kiko is taller than Rei.

The conclusion drawn above is not supported by the argument; however, the addition of one additional piece of information would make the conclusion logically sound. All of the following could be that additional piece of information EXCEPT

- (A) Kiko is taller than Luis.
- (B) Luis is taller than Marcus.
- (C) Luis and Marcus are the same height.
- (D) Marcus and Rei are the same height.
- (E) Marcus is taller than Rei.

22. It has been estimated that an increase in average regional temperature of even 0.5 degrees Fahrenheit could cost the southern United States more than \$10 billion in lost agricultural income annually.

- (A) an increase in average regional temperature of even 0.5 degrees Fahrenheit could cost the southern United States more than \$10 billion in lost agricultural income annually
- (B) every year, \$10 billion in agricultural income could be the cost to the southern United States as a result of an increase in the average temperature of the region of even 0.5 degrees Fahrenheit
- (C) the cost to the southern United States could be more than \$10 billion in income from agriculture that results from a regional increase in average temperature of even 0.5 degrees Fahrenheit annually
- (D) annual income losses in agriculture of more than \$10 billion could be the cost from increasing average temperatures in the southern United States of even 0.5 degrees Fahrenheit
- (E) annual income losses to the southern United States from the increase in average regional temperature of even 0.5 degrees Fahrenheit costing more than \$10 billion in agricultural income each year

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23. Within the Green Party, an internal debate is raging among those who believe in compromising with mainstream politicians in order to achieve some goals with those who believe the party must not abandon any of its principles.
- (A) among those who believe in compromising with mainstream politicians in order to achieve some goals with those who believe the party must not abandon any of its principles
  - (B) among those who believe that achieving some goals requires compromise with mainstream politicians and those believing that none of the party's principles must be abandoned
  - (C) between those believing in compromising with mainstream politicians in order to achieve some goals with those who believe the party must not abandon any of its principles
  - (D) between those who believe in compromising with mainstream politicians in order to achieve some goals and those who believe the party must not abandon any of its principles
  - (E) between those believing that achieving some goals means compromising with mainstream politicians and those who believe that the principles of the party must not be abandoned
24. In comparison to the drivers who live in Mountainview, a greater proportion of the drivers who live in Oak Valley exceed the speed limit regularly. This explains why there are more accidents each year in Oak Valley than in Mountainview.
- All of the following statements, if true, weaken the conclusion drawn above EXCEPT
- (A) Oak Valley has a greater proportion of blind intersections and sharp turns than has Mountainview.
  - (B) There is a greater number of drivers in Oak Valley than in Mountainview.
  - (C) Drivers in Mountainview must travel to Oak Valley to shop and work.
  - (D) Per capita, there are fewer police officers monitoring traffic in Oak Valley than there are in Mountainview.
  - (E) The roads are icier for a greater portion of the year in Oak Valley than in Mountainview.

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25. A study showed that only ten percent of American dog owners enroll their dogs in formal obedience training classes. More than twenty percent of these dog owners, the study also showed, participate in dog shows. Thus, it is obvious that people who train their dogs are more likely to participate in dog shows than are people who do not train their dogs.

The conclusion above is correct provided which of the following statements is also true?

- (A) It is impossible for a dog to compete in a dog show if the dog has not completed at least one formal obedience training class.
- (B) The proportion of dog owners who enroll their dogs in formal obedience training classes is representative of the proportion who train their dogs outside such classes.
- (C) Dog owners who participate in dog shows only train their dogs by enrolling them in formal obedience training lessons.
- (D) Participation in dog shows is a reliable indicator of how much attention a dog owner pays to his dog.
- (E) Only purebred dogs can participate in dog shows, so many owners who enroll their dogs in formal obedience training classes are excluded from this activity.

26. A bullet train travels in excess of 150 miles per hour. Therefore, if a train travels slower than 150 miles per hour, it is not a bullet train.

Which of the following most closely parallels the reasoning used in the argument above?

- (A) An orange ripens only on the vine. If it ripens on the vine, then it is not an orange.
- (B) Newspapers are often read by more than one person. Therefore, magazines are also likely to be read by more than one person.
- (C) An earthquake of 5.0 or above on the Richter scale causes massive damage. If there is not massive damage, then the earthquake did not attain a 5.0 or above.
- (D) A supersonic plane travels at speeds in excess of Mach 1. If it is not supersonic, then it will travel at speeds below Mach 1.
- (E) Fluoride generally prevents cavities. If there are no cavities, then there was no fluoride used.

**END OF EXAMINATION**