SECTION 2

Time - 30 Minutes
25 Questions

Following each problem in this section, there are five suggested answers. Work each problem in your head or in the blank space provided at the right of the page. Then look at the five suggested answers and decide which one is best.

Note: Figures that accompany problems in this section are drawn as accurately as possible EXCEPT when it is stated in a specific problem that its figure is not drawn to scale.

Sample Problem:

$$\begin{array}{r} 5{,}413 \\ -\ 4{,}827 \\ \hline \end{array}$$

(A) 586
(B) 596
(C) 696
(D) 1,586
(E) 1,686

● Ⓑ Ⓒ Ⓓ Ⓔ

USE THIS SPACE FOR FIGURING.

1. Ed plans to place a balloon on the chair of each one of his 27 grandchildren attending the family picnic. There are six balloons in each package. How many packages must he buy?

   (A) 3
   (B) 4
   (C) 5
   (D) 9
   (E) 12

2. Ken has 16 cookies and Bob has 24. How many cookies must Bob give Ken if each are to have the same number?

   (A) 12
   (B) 8
   (C) 6
   (D) 4
   (E) 2

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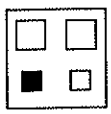
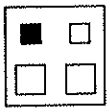
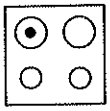
3.  is to  as  is to

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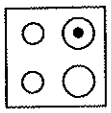
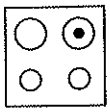
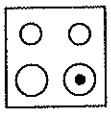
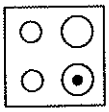
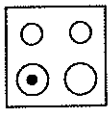
(A) 

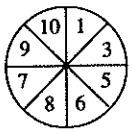
(B) 

(C) 

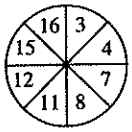
(D) 

(E) 

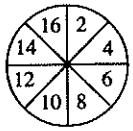
4. By throwing a dart at which of these dart boards would you have the least chance of landing on an even number?

(A) 

(B) 

(C) 

(D) 

(E) 

5. Sal has x more shirts than Zeb. Zeb has 12 shirts. How many shirts does Sal have?

(A) $x - 12$
(B) $12 + x$
(C) $x \div 12$
(D) $12 - x$
(E) $12 \div x$

GO ON TO THE NEXT PAGE.

USE THIS SPACE FOR FIGURING. **2**

6. Bill folds a sheet of paper in half as shown in Figure 1. He then cuts through both layers of the folded sheet with scissors to produce various shapes. When those shapes are unfolded, they can look like each of the following EXCEPT:

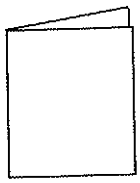
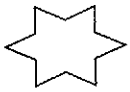
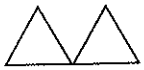
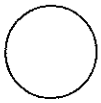


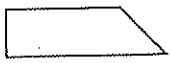
Figure 1

(A) 

(B) 

(C) 

(D) 

(E) 

7. Which of the following could be the value of T if $\frac{3}{8} + T < 1$?

(A) $\frac{5}{6}$

(B) $\frac{3}{4}$

(C) $\frac{2}{3}$

(D) $\frac{5}{8}$

(E) $\frac{3}{8}$

8. One dozen golf balls are packed in a box as illustrated in Figure 2. Each ball touches other balls or a side of the box in four places. The diameter of each ball is four centimeters. Which of the following could be the length and width of the box?

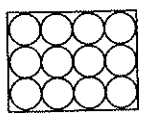


Figure 2

(A) 3 cm × 4 cm
(B) 4 cm × 6 cm
(C) 6 cm × 12 cm
(D) 12 cm × 16 cm
(E) 20 cm × 30 cm

USE THIS SPACE FOR FIGURING. **2**

$$\begin{array}{r} DEF \\ \times\ CBA \\ \hline DEF \\ JAB \\ ACFH \\ \hline ADFCGF \end{array}$$

9. Each different digit is represented by a different letter. In the problem above, which of the following must be true?

   (A) All ten digits appear in the calculation
   (B) $C = 1$
   (C) $B = 4$
   (D) $A = 1$
   (E) $D = 6$

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10. There are 21 passengers waiting in line for a taxi. If at least 1 but no more than 6 passengers must go in each taxi and no two taxis have the same number of passengers, what is the smallest number of taxis required to accommodate the 21 passengers?

    (A) 6
    (B) 10
    (C) 3
    (D) 21
    (E) 4

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11. When $M + N = 8$ and $2R + N = 8$, what is the value of R?

    (A) 16
    (B) 4
    (C) -4
    (D) -8
    (E) It cannot be determined from the information given.

12. Ahab and Jonah are playing a game that involves placing ships on a grid. Ahab placed a ship at (3, 2) as shown in Figure 3. Jonah said, "I am placing a submarine where the first number is 3 times your second number, and the second number equals your first number." Which lettered mark shows where Jonah placed his submarine?

(A) *A*
(B) *B*
(C) *C*
(D) *D*
(E) *E*

USE THIS SPACE FOR FIGURING.

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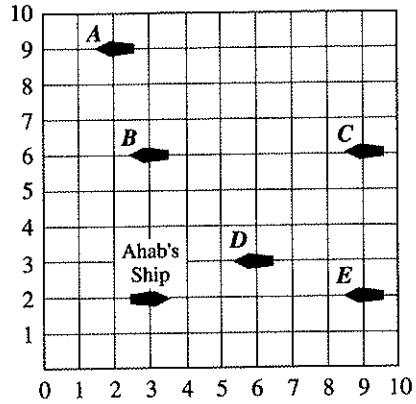

Figure 3

$$95{,}283 \div 2104 =$$

13. The result of the above calculation is closest to which of the following?

(A) 90,000
(B) 45,000
(C) 4,300
(D) 45
(E) 80,000

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14. At a daycare center, the number of tricycles and the number of automobiles in the parking lot are the same. If the number of tricycle wheels plus the number of auto wheels equals 35, how many tricycles are at the daycare center?

(A) 7
(B) 6
(C) 5
(D) 4
(E) 3

15. Mona lives 13 miles from school and Charlie lives 8 miles from the same school. In total miles, how far is Mona's house from Charlie's house?

(A) 5
(B) 21
(C) 27
(D) 32
(E) It cannot be determined from the information given.

USE THIS SPACE FOR FIGURING.

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16. If one half of the weight of a given boat is 215 tons, the weight of three boats of the exact same weight as the given boat can be determined by multiplying 215 by

(A) one half
(B) one and one half
(C) two
(D) three
(E) six

17. Which of the following must be true if two numbers, B and C, have an average of 70 and C is less than B?

(A) $B - 70 = 70 - C$
(B) $B = 70 + C$
(C) $B + C = 70$
(D) $B - C = 35$
(E) $B = 70$ and $C = 70$

18. Figure 4 represents a square piece of cardboard. If a smaller square is cut, in whole inch increments, from each corner and the cardboard is folded and taped to make a box whose base perimeter measures 20 inches, which of the following could be the area of the original square piece of cardboard?

(A) 25 square inches
(B) 24 square inches
(C) 50 square inches
(D) 81 square inches
(E) 99 square inches

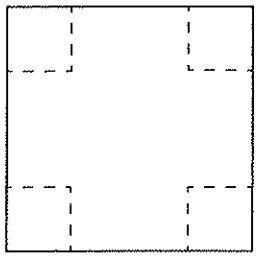

Figure 4

USE THIS SPACE FOR FIGURING.

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Questions 19-20 refer to the table in Figure 5, which defines the operation $\rightarrow$.

19. If $\rightarrow \rightarrow 1 = 3$, then $\rightarrow \rightarrow 3 =$

(A) 5
(B) 4
(C) 3
(D) 2
(E) 1

$\rightarrow 1 = 2$
$\rightarrow 2 = 3$
$\rightarrow 3 = 4$
$\rightarrow 4 = 5$
$\rightarrow 5 = 1$

Figure 5

20. Which of the following is equal to 2?

(A) $\rightarrow \rightarrow 2$
(B) $\rightarrow \rightarrow \rightarrow 2$
(C) $\rightarrow \rightarrow \rightarrow \rightarrow 2$
(D) $\rightarrow \rightarrow \rightarrow \rightarrow \rightarrow 2$
(E) $\rightarrow \rightarrow \rightarrow \rightarrow \rightarrow \rightarrow 2$

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21. In Figure 6, what is the area of the unshaded region "*S*" if *CDEF* is a square?

(A) 16
(B) 20
(C) 32
(D) 48
(E) It cannot be determined from the information given.

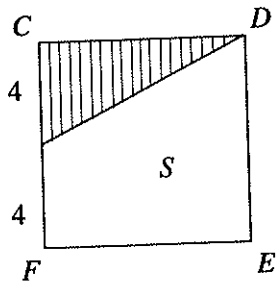

Figure 6

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22. When 40 percent of y is 15, what is 20 percent of $2y$?

(A) 5
(B) 10
(C) 15
(D) 20
(E) 30

USE THIS SPACE FOR FIGURING.

2

23. In Figure 7, if $q = 2r$, which of the following gives the value of p in terms of r?

(A) $\frac{r}{2}$

(B) $\frac{r}{3}$

(C) $\frac{r}{4}$

(D) $90 - 2r$

(E) $90 - \frac{r}{2}$

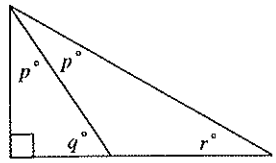

Figure 7

Note: Figure not drawn to scale.

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24. If the average of five consecutive whole numbers is 21, what is the smallest number?

(A) 10
(B) 17
(C) 19
(D) 20
(E) 21

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25. A miniature golf course has an average of 200 customers per day. To increase business, the owner plans to reduce the regular price from \$3.50 to \$2.50 before 6 p.m. each day. If 100 people pay \$3.50, how many people must pay \$2.50 if daily sales are to remain the same as before the \$2.50 price reduction plan?

(A) 120
(B) 140
(C) 160
(D) 180
(E) 220

STOP

IF YOU FINISH BEFORE TIME IS CALLED,
YOU MAY CHECK YOUR WORK ON THIS SECTION ONLY.
DO NOT TURN TO ANY OTHER SECTION IN THE TEST.