

PRACTICE TEST A

Answer Sheet

Directions: For each question, darken the oval that corresponds to your answer choice. Mark only one oval for each question. If you change your mind, erase your answer completely.

Section 1

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|------------------------|-------------------------|-------------------------|-------------------------|
| 1. (A) (B) (C) (D) (E) | 8. (A) (B) (C) (D) (E) | 15. (A) (B) (C) (D) (E) | 22. (A) (B) (C) (D) (E) |
| 2. (A) (B) (C) (D) (E) | 9. (A) (B) (C) (D) (E) | 16. (A) (B) (C) (D) (E) | 23. (A) (B) (C) (D) (E) |
| 3. (A) (B) (C) (D) (E) | 10. (A) (B) (C) (D) (E) | 17. (A) (B) (C) (D) (E) | 24. (A) (B) (C) (D) (E) |
| 4. (A) (B) (C) (D) (E) | 11. (A) (B) (C) (D) (E) | 18. (A) (B) (C) (D) (E) | 25. (A) (B) (C) (D) (E) |
| 5. (A) (B) (C) (D) (E) | 12. (A) (B) (C) (D) (E) | 19. (A) (B) (C) (D) (E) | |
| 6. (A) (B) (C) (D) (E) | 13. (A) (B) (C) (D) (E) | 20. (A) (B) (C) (D) (E) | |
| 7. (A) (B) (C) (D) (E) | 14. (A) (B) (C) (D) (E) | 21. (A) (B) (C) (D) (E) | |

Section 2

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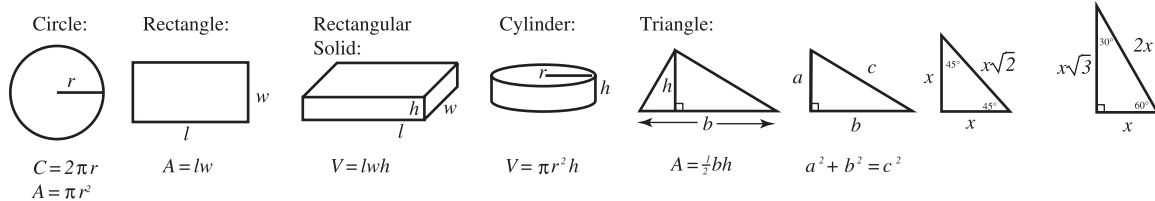
Note: Only the answers entered on the grid are scored. Handwritten answers at the top of the column are *not* scored.

PRACTICE TEST A

Section 1

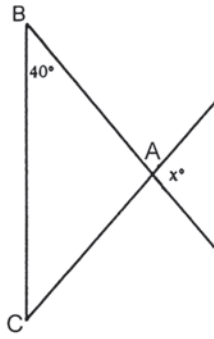
25 Questions

Time: 30 Minutes



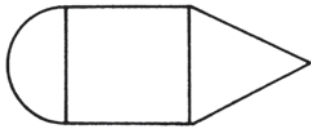
The number of degrees of arc in a circle is 360.
 The measure in degrees of a straight angle is 180.
 The sum of the measures in degrees of the angles of a triangle is 180.

- If 20% of a number is 8, what is 25% of the number?
 - 2
 - 10
 - 12
 - 11
 - 15
- If $x + 3$ is a multiple of 3, which of the following is not a multiple of 3?
 - x
 - $x + 6$
 - $6x + 18$
 - $2x + 6$
 - $3x + 5$
- In the figure below, $AB = AC$. Then $x =$

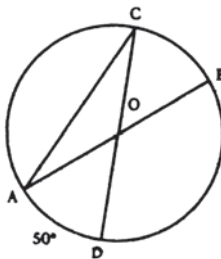


 - 40°
 - 80°
 - 100°
 - 60°
 - 90°
- $\left(\frac{2}{5} \div \frac{2}{3}\right) + \left(\frac{1}{2} - \frac{1}{10}\right) =$
 - $-\frac{1}{10}$
 - $-\frac{1}{7}$
 - $\frac{19}{15}$
 - $\frac{1}{5}$
 - 1
- The toll on the Islands Bridge is \$1.00 for car and driver and \$.75 for each additional passenger. How many people were riding in a car for which the toll was \$3.25?
 - 2
 - 3
 - 4
 - 5
 - none of these
- If $y^3 = 2y^2$ and $y \neq 0$, then y must be equal to
 - 1
 - $\frac{1}{2}$
 - 2
 - 3
 - 1

7. If x and y are negative integers and $x - y = 1$, what is the least possible value for xy ?
- (A) 0
 (B) 1
 (C) 2
 (D) 3
 (E) 4
8. A park is in the shape of a square, a triangle, and a semicircle, attached as in the diagram below. If the area of the square is 144 and the perimeter of the triangle is 28, find the perimeter of the park.

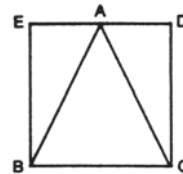


- (A) $52 + 12\pi$
 (B) $52 + 6\pi$
 (C) $40 + 6\pi$
 (D) $34 + 12\pi$
 (E) $32 + 6\pi$
9. An oil tank has a capacity of 45 gallons. At the beginning of October it is 80% full. At the end of October it is $\frac{1}{3}$ full. How many gallons of oil were used in October?
- (A) 21
 (B) 25
 (C) 41
 (D) 27
 (E) 30
10. \overline{AB} and \overline{CD} are diameters of circle O . The number of degrees in angle CAB is



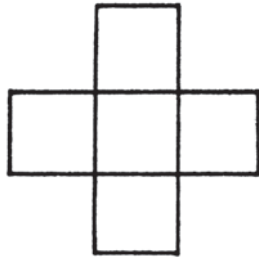
- (A) 50
 (B) 100
 (C) 130
 (D) $12\frac{1}{2}$
 (E) 25

11. If $\frac{a}{b} \cdot \frac{b}{c} \cdot \frac{c}{d} \cdot \frac{d}{e} \cdot x = 1$, then x must equal
- (A) $\frac{a}{e}$
 (B) $\frac{e}{a}$
 (C) e
 (D) $\frac{1}{a}$
 (E) none of these
12. If the sum of x and y is z and the average of m , n , and p is q , find the value of $x + y + m + n + p$ in terms of z and q .
- (A) $2z + 3q$
 (B) $z + 3q$
 (C) $z + z + \frac{q}{3}$
 (D) $\frac{z}{2} + \frac{q}{3}$
 (E) none of these
13. Isosceles triangle ABC is inscribed in square $BCDE$ as shown. If the area of square $BCDE$ is 4, the perimeter of triangle ABC is



- (A) 8
 (B) $2 + \sqrt{5}$
 (C) $2 + 2\sqrt{5}$
 (D) $2 + \sqrt{10}$
 (E) 12
14. If a is not 0 or 1, a fraction equivalent to $\frac{\frac{1}{a}}{2 - \frac{2}{a}}$ is
- (A) $\frac{1}{2a-2}$
 (B) $\frac{2}{a-2}$
 (C) $\frac{1}{a-2}$
 (D) $\frac{1}{a}$
 (E) $\frac{2}{2a-1}$
15. At 3:30 P.M. the angle between the hands of a clock is
- (A) 90°
 (B) 80°
 (C) 75°
 (D) 72°
 (E) 65°

16. A clerk's weekly salary is \$320 after a 25% raise. What was his weekly salary before the raise?
- (A) \$256
(B) \$260
(C) \$300
(D) \$304
(E) \$316
17. The figure below is composed of 5 equal squares. If the area of the figure is 125, find its perimeter.



- (A) 60
(B) 100
(C) 80
(D) 75
(E) 20
18. Which of the following is equal to $\frac{1}{2}$ of $\frac{3}{5}$?
- (A) 3%
(B) $33\frac{1}{3}\%$
(C) 30%
(D) $83\frac{1}{3}\%$
(E) 120%
19. The length of an arc of a circle is equal to $\frac{1}{5}$ of the circumference of the circle. If the length of the arc is 2π , the radius of the circle is
- (A) 2
(B) 1
(C) 10
(D) 5
(E) $\sqrt{10}$
20. If two sides of a triangle are 3 and 4 and the third side is x , then
- (A) $x = 5$
(B) $x > 7$
(C) $x < 7$
(D) $1 < x < 7$
(E) $x > 7$ or $x < 1$
21. The smallest integer that, when squared, is less than 5 is
- (A) 0
(B) 1
(C) 2
(D) 3
(E) none of these
22. Mr. Prince takes his wife and two children to the circus. If the price of a child's ticket is $\frac{1}{2}$ the price of an adult ticket and Mr. Prince pays a total of \$12.60, find the price of a child's ticket.
- (A) \$4.20
(B) \$3.20
(C) \$1.60
(D) \$2.10
(E) \$3.30
23. If $\begin{pmatrix} a \\ b & c \end{pmatrix}$ is defined as being equal to $ab - c$, then $\begin{pmatrix} 3 \\ 4 & 5 \end{pmatrix} + \begin{pmatrix} 5 \\ 6 & 7 \end{pmatrix}$ is equal to
- (A) 30
(B) 40
(C) 11
(D) 6
(E) 15
24. The diameter of a circle is increased by 50%. The area is increased by
- (A) 50%
(B) 100%
(C) 125%
(D) 200%
(E) 250%
25. Of the students at South High, $\frac{1}{3}$ are seniors. Of the seniors, $\frac{3}{4}$ will go to college next year. What percent of the students at South High will go to college next year?
- (A) 75
(B) 25
(C) $33\frac{1}{3}$
(D) 50
(E) 45

Section 2

25 Questions

Time: 30 Minutes

Directions: Solve each of the following problems. Write the answer in the corresponding grid on the answer sheet and fill in the ovals beneath each answer you write. Here are some examples.

Answer: $3/4$ ($-.75$; show answer either way)

Answer: 325

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Note: A mixed number such as $3 \frac{1}{2}$ must be gridded as $7/2$ or as 3.5 . If gridded as “ $3 \frac{1}{2}$,” it will be read as “thirty-one halves.”

Note: Either position is correct.

- If $a = 4$, what is the value of $\sqrt{a^2 + 9}$?
- When a certain number is divided by 2, there is no remainder. If there is a remainder when the number is divided by 4, what must the remainder be?
- If $a = x^2$ and $x = \sqrt{8}$, what is the value of a ?
- If $\frac{2}{5}x = \frac{5}{2}y$, what is the value of $\frac{y}{x}$?
- If there are 30 students at a meeting of the Forum Club, and 20 are wearing white, 17 are wearing black and 14 are wearing both black and white, how many are wearing neither black nor white?
- If $a \square b$ means $a \cdot b + (a - b)$, find the value of $4 \square 2$.
- A drawer contains 4 red socks and 4 blue socks. Find the least number of socks that must be drawn from the drawer to be assured of having a pair of red socks.
- How many 2-inch squares are needed to fill a border around the edge of the shaded square with a side of 6" as shown in the figure below?



- If $3x + 3x - 3x = 12$, what is the value of $3x + 1$?
- If $ab = 10$ and $a^2 + b^2 = 30$, what is the value of $(a + b)^2$?