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for SAT Prep Classes**1. Linear Equations and Inequalities****Question 1:**

Which of the following is a solution to the equation

$$2x - 3 = 11?$$

- a. 5
- b. 7
- c. 9
- d. 12

2. Quadratic Equations**Question 2:**

Which of the following could be the graph of

$$y = x^2 - 4x + 3?$$

- a. A parabola with its vertex at (2, -1)
- b. A parabola with its vertex at (2, 1)
- c. A parabola with its vertex at (-2, -1)
- d. A parabola with its vertex at (-2, 1)

3. Functions and Radicals**Question 3:**

If

$$f(x) = x^2 + 3x - 4, \text{ what is } f(-3)?$$

- a. -4
- b. 2
- c. 10
- d. 14

4. Geometry**Question 4:**

A rectangle has a length that is twice its width. If the perimeter of the rectangle is 36, what is the area of the rectangle?

- a. 24
- b. 48
- c. 72
- d. 144

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The mean score of 6 students in a class test is 84. If one more student joins the class and scores 96, what will be the new mean?

- a. 84
- b. 85
- c. 86
- d. 88

6. Proportions and Ratios**Question 6:**

A mixture contains liquids A and B in the ratio 3:2. If 9 litres are drawn off and replaced with liquid B, the ratio becomes 2:3. What is the total quantity of the mixture?

- a. 15 liters
- b. 27 liters
- c. 36 liters
- d. 45 liters

7. Quadratic Equations**Question 7:**

Which of the following is a factor of

$$x^2 - 5x + 6?$$

- a. $x-3$
- b. $x+3$
- c. $x-2$
- d. $x+2$

8. Systems of Equations**Question 8:**

What is the solution to the system of equations:

$$y = 2x + 1 \mid y = x - 2$$

- a. (1, 3)
- b. (-3, -5)
- c. (3, 7)
- d. No solution



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9. Geometry

Question 9:

The diagonals of a rhombus are 10 cm and 24 cm. What is the area of the rhombus?

- a. 60 cm^2
- b. 120 cm^2
- c. 240 cm^2
- d. 480 cm^2

10. Trigonometry

Question 10:

For what value of x in the interval $[0, 2\pi]$ is $\sin(x) = \sqrt{3}/2$?

- a. $\pi/3$
- b. $\pi/6$
- c. $\pi/2$
- d. $2\pi/3$

11. Problem Solving

Question 11:

A car travels at a constant speed. If it goes 60 miles in 1 hour, how long will it take to travel 180 miles?

- a. 1 hour
- b. 2 hours
- c. 3 hours
- d. 4 hours

12. Data Analysis

Question 12:

The median of a set of numbers $\{4, 5, 9, x, 17\}$ is 9. What is the value of x ?

- a. 7
- b. 10
- c. 12
- d. 15

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A circle has a radius of 7 cm. What is its circumference to the nearest cm?

- a. 22 cm
- b. 44 cm
- c. 88 cm
- d. 154 cm

14. Functions**Question 14:**

If $g(x) = 2x^2 - 4x + 5$, what is $g(0)$?

- a. 0
- b. 2
- c. 5
- d. 7

15. Algebraic Expressions**Question 15:**

What is the simplified form of

$$3x^2 - 2x + 4 + 2x^2 + 3x - 5?$$

- a. $5x^2 + x - 1$
- b. $5x^2 + x + 9$
- c. $6x^2 + x - 1$
- d. $5x^2 - x + 9$

16. Geometry**Question 16:**

The base of a triangle is 12 cm and its height is 8 cm. What is its area?

- a. 48 cm^2
- b. 96 cm^2
- c. 52 cm^2
- d. 104 cm^2



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17. Trigonometry

Question 17:

What is the value of $\cos(0^\circ)$?

- a. 0
- b. 0.5
- c. 1
- d. -1

18. Problem Solving

Question 18:

If 5 shirts cost \$60, how much do 8 shirts cost?

- a. \$68
- b. \$96
- c. \$120
- d. \$192

19. Quadratic Equations

Question 19:

What are the roots of

$$x^2 - 6x + 9?$$

- a. 2 and 3
- b. 3 and 3
- c. -3 and -3
- d. 1 and 9

20. Data Analysis

Question 20:

The average of five numbers is 20. If one of the numbers is 40, what is the sum of the other four numbers?

- a. 60
- b. 80
- c. 100
- d. 120