SAT Math Practice Module 1

22 mixed questions, easier to harder. Suggested time: 35 minutes

Name _____ Date _____

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1. Solve: $y = 5x$ and $y = x + 12$. Find x.

2. $y = (x - 9)(x - 9)$. Find the sum of the zeros.

3. How many solutions: $y = 7x + 2$ and $y = 7x + 8$?
   (A) Two (B) Infinitely many (C) None (D) One

4. A gym charges $C = 21 + 17m$. What does 17 mean?
   (A) Total cost (B) Cost per month (C) Number of months (D) Signup fee

5. "At least 24 students" means...
   (A) $s \geq 24$ (B) $s > 24$ (C) $s < 24$ (D) $s \leq 24$

6. Find the y-intercept of $y = x^2 - 4x + 6$.

7. Find the mean of 21, 23, 25.

8. Find the sum of the solutions of $6x^2 - 12x + 5 = 0$.

9. Solve: $3 - 3x \geq 15$
   (A) $x \geq -4$ (B) $x \leq -4$ (C) $x \leq 4$ (D) $x \geq 4$

10. $y = (x - 3)(x - 7)$. Find the x of the vertex.

11. A recipe for 5 people uses 5 cups. How many cups for 25 people?

12. A taxi costs $C = 3 + 3d$. A ride cost \$30. How many miles?

13. 15 of 54 boys and 28 of 42 girls play. A player is chosen at random. Find the probability it's a boy.

14. $3x + 6y = 9$ and $9x + ky = 28$ has no solution. Find k.

15. Convert 216 km/h to m/s.

16. $5x + y = 11$ and $x + 5y = 7$. Find $x + y$.

17. $x^2 - 10x + 24 = 0$. Find $\frac{1}{r} + \frac{1}{s}$ for its solutions, as a fraction.

18. Which grows faster in the long run?
   (A) Depends on 79 (B) They're equal (C) $y = 79(1.01)^x$ (D) $y = 595x$

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19. A value goes up 20% and then down 20%. What's the net percent decrease?

20. A ball's height is $h = -4(t-2)^2 + 47$. What's the max height?

21. Boxes hold 19 items. What's the fewest boxes for 173 items?

22. $f(x) = x^2 + 4$. For which positive x is $f(x) = 8$?

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SAT Math Practice Module 1: Answer Key

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1. 3

   Set them equal.

2. 18

   The zeros are 9 and 9.

3. (C) None

   Same slope and different intercepts: parallel.

4. (B) Cost per month

   It multiplies m.

5. (A) $s \geq 24$

   At least includes 24 and everything above.

6. 6

   Set $x = 0$.

7. 23

   Total divided by 3.

8. 2

   $-\frac{b}{a}$.

9. (B) $x \leq -4$

   Subtract, then dividing by -3 flips it.

10. 5

    Halfway between the zeros.

11. 25

    1 cups per person.

12. 9

    Subtract 3, then divide by 3.

13. $\frac{15}{43}$

    Denominator is players only: 43.

14. 18

    Multiply the first by 3: the y coefficient must match.

15. 60

    Multiply by 1000, divide by 3600.

16. 3

    Add them, then divide by 6.

17. $\dfrac{10}{24}$

    $\dfrac{r+s}{rs}$.

18. (C) $y = 79(1.01)^x$

    Any exponential growth eventually beats any linear growth.

19. 4

    $(1+x)(1-x) = 1-x^2$.

20. 47

    Read the vertex.

21. 10

    $173 \div 19$, and round up: a partial box still needs a box.

22. 2

    $x^2 = 4$.

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