SAT Math Practice Module 3

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. $\frac{5}{9} = \frac{x}{18}$. Find x.

3. "At least 34 students" means...
   (A) $s < 34$ (B) $s \geq 34$ (C) $s \leq 34$ (D) $s > 34$

4. Find the radius of $(x - 3)^2 + (y - 2)^2 = 64$.

5. A gym charges $C = 89 + 12m$. What does 12 mean?
   (A) Number of months (B) Signup fee (C) Total cost (D) Cost per month

6. $y = 717(1.07)^t$ means...
   (A) Grows 7% per step (B) Falls 7% per step (C) Grows 717 per step (D) Grows 7 per step

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

8. Find the sum of the solutions of $6x^2 - 42x + 3 = 0$.

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9. Which form shows the vertex directly?
   (A) $y = x^2 + 4x + 5$ (B) $y = 2x^2 - 12x + 19$ (C) $y = (x - 1)(x - 5)$ (D) $y = 2(x - 3)^2 + 1$

10. $g(x) = f(x) + 6$ and $f(4) = 9$. Find $g(4)$.

11. In a right triangle with $\sin A = \frac{3}{5}$, what's $\cos B$?

12. $2x + 7y = 9$ and $4x + ky = 19$ has no solution. Find k.

13. $f(x) = (x - 4)(x + 6)$ has zeros at...
   (A) -4 and -6 (B) -4 and 6 (C) 4 and 6 (D) 4 and -6

14. A price rises from \$42 to \$63. What's the percent increase?

15. A tank has 173 L and drains 6 L a minute. How long until it has 89 L, in minutes?

16. An account starts with \$100 and earns 10% yearly. How much after 2 years, in dollars?

17. $y = 3x + 11$. If x increases by 4, by how much does y increase?

18. A survey of gym members finds that 80% like exercise. What can you conclude?
   (A) Only about gym members (B) Exercise causes liking (C) All adults like exercise (D) 80% of everyone

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19. $f(x) = 5x - 32$. For what x does $f(x) = x$?

20. $P = 50(2)^{t/5}$. When is $P = 400$?

21. A value doubles every 8 years. By what factor does it grow in 24 years?

22. 20 tickets sold. Adults \$8, kids \$4, total \$108. How many kids' tickets?

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SAT Math Practice Module 3: Answer Key

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1. 3

   Set them equal.

2. 10

   Scale by 2.

3. (B) $s \geq 34$

   At least includes 34 and everything above.

4. 8

   The root of 64.

5. (D) Cost per month

   It multiplies m.

6. (A) Grows 7% per step

   1.07 is 100% plus 7%.

7. -4

   Set $x = 0$.

8. 7
   $-\dfrac{b}{a}$.

9. (D) $y = 2(x-3)^2 + 1$

   Vertex form: (h, k).

10. 15

    Add 6.

11. $\dfrac{3}{5}$
    $A + B = 90°$, so $\sin A = \cos B$.

12. 14

    Multiply the first by 2: the y coefficient must match.

13. (D) 4 and -6

    Set each factor to 0.

14. 50
    $\dfrac{21}{42}$.

15. 14

    $89 = 173 - 6t$.

16. 121

    $100(1.1)^2$.

17. 12

    The increase is slope times the change.

18. (A) Only about gym members

    You can only generalize to the sampled group.

19. 8

    $5x - 32 = x$.

20. 15

    $2^{t/5} = 8$.

21. 8

    3 doublings.

22. 13

    $x + y = 20$ and $8x + 4y = 108$.

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