MCCREESH MATH | PRACTICE WITH PURPOSE

SAT Math Practice Sampler

20 original practice questions with explained answers

A focused warm-up for the digital SAT

Use this original sampler to review the algebra, data, modeling, and geometry ideas that appear on the digital SAT. Try every question before checking the explanations.

How to use this set

1. Set aside 25-35 minutes and work without looking at the answer key.
2. Mark a question if you were unsure, even if you got it right.
3. Use the explanation to find the exact skill to practice next.

Original McCreesh Math practice - not affiliated with or endorsed by the College Board.

SAT MATH PRACTICE

Questions 1-7

Choose the best answer. Use a calculator when it helps.

LINEAR EQUATIONS

1. Solve for x: 3x - 7 = 20.

A. 7
B. 9
C. 11
D. 13

FUNCTIONS

2. If f(x) = 2x + 5, what is f(4)?

A. 8
B. 11
C. 13
D. 18

SYSTEMS

3. For the system x + y = 10 and x - y = 4, what is x?

A. 3
B. 5
C. 7
D. 14

PERCENT

4. What is the value of x if 0.25x = 18?

A. 4.5
B. 18
C. 54
D. 72

QUADRATICS

5. The graph of $y = x^2 - 5x + 6$ crosses the x-axis at which two values?

A. -3 and -2
B. 2 and 3
C. 5 and 6
D. 1 and 6

QUADRATICS

6. Which value is a solution of (x - 4)(x + 2) = 0?

A. -6
B. -4
C. 2
D. 4

QUADRATICS

7. What is the positive solution of $x^2 - 9 = 0$?

A. -9
B. -3
C. 3
D. 9

SAT MATH PRACTICE

Questions 8-14

Choose the best answer. Use a calculator when it helps.

VERTEX FORM

8. What is the vertex of $y = (x - 3)^2 + 1$?

A. (-3, 1)
B. (3, -1)
C. (3, 1)
D. (1, 3)

EXPONENTIAL GROWTH

9. If g(t) = 3(2)^t, what is g(4)?

A. 16
B. 24
C. 32
D. 48

EXPONENTIAL DECAY

10. For y = 5(0.8)^x, what is the initial value?

A. 0.8
B. 4
C. 5
D. 8

LINEAR MODELS

11. A quantity has values 4, 8, 12, and 16 when x increases by 1 each time. What is the rate of change?

A. 1
B. 2
C. 4
D. 8

RATIOS

12. The ratio of 6 to 15 is equivalent to which ratio?

A. 2:5
B. 3:5
C. 5:2
D. 10:25

PERCENT

13. After a 20% discount, an item costs $64. What was its original price?

A. $51.20
B. $76.80
C. $80
D. $84

DATA

14. What is the mean of 6, 8, 10, and 12?

A. 8
B. 9
C. 10
D. 36

Questions 15-20

Choose the best answer. Use a calculator when it helps.

PROPORTIONAL RELATIONSHIPS

15. Three cups of flour make 18 cookies. At the same rate, how many cookies can five cups make?

A. 24
B. 30
C. 33
D. 54

GEOMETRY

16. A rectangle has perimeter 30 and length 9. What is its area?

A. 24
B. 45
C. 54
D. 81

CIRCLES

17. A circle has radius 5. What is its circumference?

A. 5π
B. 10π
C. 25π
D. 50π

RIGHT TRIANGLES

18. A right triangle has legs 6 and 8. What is the hypotenuse?

A. 10
B. 12
C. 14
D. 100

PROBABILITY

19. A bag has 3 red, 2 blue, and 5 green marbles. What is the probability of choosing a red marble?

A. 1/5
B. 3/10
C. 1/3
D. 3/5

MODELING

20. A linear model is $y = 12 + 4x$. What does the model predict when $x = 5$?

A. 17
B. 20
C. 29
D. 32

ANSWER KEY

Answers and explanations 1-10

Use each explanation to identify the skill worth reviewing.

1. Answer: B

Add 7 to both sides to get 3x = 27. Divide by 3: x = 9.

2. Answer: C

Substitute 4 for x: 2(4) + 5 = 13.

3. Answer: C

Add the equations: 2x = 14, so x = 7.

4. Answer: D

Divide by 0.25, or multiply by 4. x = 72.

5. Answer: B

Factor: $x^2 - 5x + 6 = (x - 2)(x - 3)$. The zeros are 2 and 3.

6. Answer: D

A product is zero when a factor is zero. x - 4 = 0 gives x = 4.

7. Answer: C

$x^2 = 9$, so x = ±3. The positive solution is 3.

8. Answer: C

In $y = (x - h)^2 + k$, the vertex is (h, k). Here it is (3, 1).

9. Answer: D

g(4) = 3(2■) = 3(16) = 48.

10. Answer: C

The initial value occurs when x = 0. Then y = 5(0.8)^0 = 5.

ANSWER KEY

Answers and explanations 11-20

Use each explanation to identify the skill worth reviewing.

11. Answer: C

Each step in x raises the quantity by 4, so the rate of change is 4.

12. Answer: A

Divide both parts of 6:15 by 3 to get 2:5.

13. Answer: C

A 20% discount leaves 80% of the original price. 0.80p = 64, so p = 80.

14. Answer: B

The total is 36. Divide by 4 values: 36/4 = 9.

15. Answer: B

18 ÷ 3 = 6 cookies per cup. Then 5(6) = 30 cookies.

16. Answer: C

2L + 2W = 30 gives 18 + 2W = 30, so W = 6. Area = 9(6) = 54.

17. Answer: B

Circumference is $2\pi r = 2\pi(5) = 10\pi$.

18. Answer: A

Use $a^2 + b^2 = c^2$: $6^2 + 8^2 = 36 + 64 = 100$, so c = 10.

19. Answer: B

There are 10 marbles total and 3 are red, so the probability is 3/10.

20. Answer: D

Substitute x = 5: y = 12 + 4(5) = 32.