



Grade 8 Math Practice — Grade 8 (Set 5)

Core Skills Edition | Curriculum-aligned worksheet

Integers & Rational Numbers

Work with exponents, square roots, and rational numbers.

1. Simplify: $(-3)^2 + 4 \times 2 - 1$

- A) 14
- B) 16
- C) 18
- D) 8

2. Evaluate: $\sqrt{144} - \sqrt{49}$

- A) 5
- B) 7
- C) 9
- D) 3

3. Simplify: $2^3 \times 2^2 \div 2^2$

- A) 2^2
- B) 2^2
- C) 2^{12}
- D) 4

4. Express $0.\overline{6}$ ($0.666\dots$) as a fraction.

- A) $\frac{3}{5}$
- B) $\frac{2}{3}$
- C) $\frac{6}{10}$
- D) $\frac{6}{9}$

5. What is $(-2)^3$?

- A) 8
- B) -8
- C) 6
- D) -6



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6. Explain why $(-1)^{1 \cdot 2} = 1$ but $(-1)^{1 \cdot 2^1} = -1$.

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Solving Equations

Solve linear equations and inequalities.

7. Solve: $3x - 7 = 14$

- A) $x = 3$
- B) $x = 7$
- C) $x = -7$
- D) $x = 21/3$

8. Solve: $2(x + 5) = 3x - 1$

- A) $x = 9$
- B) $x = 11$
- C) $x = 7$
- D) $x = -1$

9. Solve: $4x > 12$

- A) $x > 3$
- B) $x > -3$
- C) $x < -3$
- D) $x < 3$

10. What is the value of x if $5x + 3 = 2x + 18$?

- A) $x = 3$
- B) $x = 5$
- C) $x = 7$
- D) $x = 15$

11. The sum of three consecutive integers is 15. Find the three integers. Write an equation first, then solve.



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Geometry

Pythagorean theorem, surface area, volume, circle geometry.

12. A right triangle has legs 9 cm and 8 cm. The hypotenuse² = ?

- A) 72
- B) 145
- C) 17
- D) 290

13. A cylinder has radius 10 cm and height 10 cm. Volume? (π ≈ 3.14)

- A) 3130
- B) 3140
- C) 3150
- D) 628

14. Surface area of a cube with side 8 cm:

- A) 256
- B) 384
- C) 512
- D) 48

15. A ladder 10 m long leans against a wall. The base is 6 m from the wall. How high does it reach?

- A) 4 m
- B) 6 m
- C) 8 m
- D) 12 m

16. A cone has radius 10 cm and height 12 cm. Find its volume. ($V = \frac{1}{3} \pi r^2 h$)



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Linear Relations

Slope, y-intercept, and graphing lines.

17. What is the slope of the line through (1, 3) and (4, 9)?

- A) 1
- B) 2
- C) 3
- D) 6

18. A line has equation $y = ?2x + 5$. The y-intercept is:

- A) ?2
- B) 2
- C) 5
- D) ?5

19. Parallel lines have:

- A) Equal slopes
- B) Perpendicular slopes
- C) No slopes
- D) Opposite slopes

20. What is the x-intercept of $y = 3x ? 6$?

- A) (2, 0)
- B) (0, ?6)
- C) (?2, 0)
- D) (6, 0)

21. Write the equation of a line with slope 3 passing through (2, 7). Show your work.



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Data & Probability

Calculate probability and interpret data displays.

22. Two dice are rolled. $P(\text{sum} = 7) = ?$

- A) $\frac{1}{6}$
- B) $\frac{1}{12}$
- C) $\frac{5}{36}$
- D) $\frac{6}{36}$

23. A spinner has: 40% blue, 35% red, 25% green. In 200 spins, expected blue landings?

- A) 40
- B) 60
- C) 80
- D) 100

24. The IQR of $\{3, 5, 7, 9, 11, 13, 15\}$ is:

- A) 4
- B) 6
- C) 8
- D) 10

25. A scatter plot shows a positive correlation. This means:

- A) $x \uparrow, y \uparrow$
- B) $x \uparrow, y \downarrow$
- C) No relationship
- D) $x = y$

26. Explain the difference between experimental and theoretical probability with an example.



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