



Grade 8 Math Practice — Grade 8 (Set 4) — Answer Key

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 [CORRECT]

C) 18

D) 8

2. Evaluate: $144 \div 49$

A) 5 [CORRECT]

B) 7

C) 9

D) 3

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

A) 2^2 [CORRECT]

B) 2^2

C) 2^{12}

D) 4

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

A) $\frac{3}{5}$

B) $\frac{2}{3}$ [CORRECT]

C) $\frac{6}{10}$

D) $\frac{6}{9}$

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

A) 8

B) -8 [CORRECT]

C) 6

D) -6



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6. Explain why $(-1)^{??} = 1$ but $(-1)^{?1} = ?1$.

Answer: An even exponent on a negative base gives a positive result because the negatives pair up.
An odd exponent leaves one unpaired negative.

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Solving Equations

Solve linear equations and inequalities.

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

A) $x = 3$

B) $x = 7$ [CORRECT]

C) $x = 7$

D) $x = 21/3$

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

A) $x = 9$

B) $x = 11$ [CORRECT]

C) $x = 7$

D) $x = 1$

9. Solve: $4x > 12$

A) $x > 3$

B) $x > 3$

C) $x < 3$ [CORRECT]

D) $x < 3$

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

A) $x = 3$

B) $x = 5$ [CORRECT]

C) $x = 7$

D) $x = 15$

11. The sum of three consecutive integers is 12. Find the three integers. Write an equation first, then solve.

Answer: Let n = first integer. $n + (n+1) + (n+2) = 12$. $3n + 3 = 12$. $n = 3$. Integers: 3, 4, 5.



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Geometry

Pythagorean theorem, surface area, volume, circle geometry.

12. A right triangle has legs 12 cm and 7 cm. The hypotenuse² = ?

A) 84

B) 193 [CORRECT]

C) 19

D) 386

13. A cylinder has radius 9 cm and height 10 cm. Volume? (?? 3.14)

A) 2533

B) 2543 [CORRECT]

C) 2553

D) 565

14. Surface area of a cube with side 7 cm:

A) 196

B) 294 [CORRECT]

C) 343

D) 42

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 [CORRECT]

D) 12 m

16. A cone has radius 9 cm and height 12 cm. Find its volume. ($V = \frac{1}{3}\pi r^2h$)

Answer: $V = \frac{1}{3}(3.14)(9^2)(12) = 1017.4 \text{ cm}^3$.



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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 [CORRECT]

C) 3

D) 6

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

A) ?2

B) 2

C) 5 [CORRECT]

D) ?5

19. Parallel lines have:

A) Equal slopes [CORRECT]

B) Perpendicular slopes

C) No slopes

D) Opposite slopes

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

A) (2, 0) [CORRECT]

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.

Answer: $y = mx + b$. $7 = 3(2) + b$? $b = 1$. So $y = 3x + 1$.



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Data & Probability

Calculate probability and interpret data displays.

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

- A) $1/6$
- B) $1/12$
- C) $5/36$

D) $6/36$ [CORRECT]

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

- A) 40
- B) 60

C) 80 [CORRECT]

- D) 100

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

- A) 4
- B) 6

C) 8 [CORRECT]

- D) 10

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

A) $x ?$, $y ?$ [CORRECT]

- B) $x ?$, $y ?$

C) No relationship

- D) $x = y$

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

Answer: Answers vary. Look for: clear definition of fair/equal chance or distinction between calculated vs. observed probability, with a concrete example.



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