



Grade 9 Math Practice — Grade 9 (Set 3) — Answer Key

Core Skills Edition | Curriculum-aligned worksheet

Number & Operations

Exponents, radicals, rational numbers, and order of operations.

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

A) 4 [CORRECT]

B) 8

C) 16

D) 32

4. Express 0.6 as a fraction.

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

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

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

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

5. Evaluate: $(-2)^3 + 3^2$

A) 25 [CORRECT]

B) 7

C) -7

D) -25



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6. Simplify: $(33 \div 32) \times 3^2$. Express as a single power of 3.

Answer: $3^{(3 \div 2 + 2)} = 3^3$.

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Algebra & Coding

Expand, factor, and solve equations.

7. Expand and simplify: $3(2x - 4) + 5x$

A) $11x - 12$ [CORRECT]

B) $11x - 4$

C) $6x - 12$

D) $11x + 12$

8. Solve: $2(x + 3) = 5x - 9$

A) $x = 5$ [CORRECT]

B) $x = 3$

C) $x = 1$

D) $x = -5$

9. Factor completely: $6x^2 + 9x$

A) $3x(2x + 3)$ [CORRECT]

B) $x(6x + 9)$

C) $3(2x^2 + 3x)$

D) $6x(x + 9)$

10. Simplify: $(4x^2 - 2x + 1) - (x^2 + 3x - 5)$

A) $3x^2 - 5x + 6$ [CORRECT]

B) $3x^2 + x - 4$

C) $5x^2 + x + 6$

D) $3x^2 - 5x - 4$

11. If $f(x) = 2x - 3$, find $f(7)$.

A) 11 [CORRECT]

B) 14

C) 17

D) 8



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12. The perimeter of a rectangle is 58 cm. The length is 3 more than twice the width. Find the dimensions.

Answer: Let w = width, $l = 2w + 3$. $2(w + 2w + 3) = 58 \Rightarrow 6w + 6 = 58 \Rightarrow w = 52/6 \Rightarrow 8.67$ cm, $l \approx 20.33$ cm.

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Linear Relations

Slope, y-intercept, graphing, and equations of lines.

13. What is the slope of the line through (2, 5) and (6, 13)?

A) 1

B) 2 [CORRECT]

C) 3

D) 4

14. A line has equation $y = -3x + 7$. The y-intercept is:

A) -3

B) 3

C) 7 [CORRECT]

D) -7

15. Which equation has slope $\frac{1}{2}$ passing through the origin?

A) $y = 2x$

B) $y = x/2$ [CORRECT]

C) $y = x + 1/2$

D) $y = (x+1)/2$

16. Two lines have slopes $\frac{2}{3}$ and $-\frac{3}{2}$. They are:

A) Parallel

B) Perpendicular [CORRECT]

C) The same line

D) Neither

17. The x-intercept of $y = 2x + 7$ is:

A) (-3.5, 0) [CORRECT]

B) (0, 7)

C) (2, 0)

D) (0, 0)

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18. A cell phone plan costs \$25/month plus \$0.05 per text. Write C as a function of t texts. Cost for 200 texts?

Answer: $C = 25 + 0.05t$. $C(200) = 25 + 10 = \$35$.

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Geometry (Analytic & Measurement)

Distance, midpoint, area, volume, and circle properties.

19. Find the midpoint of (1, 3) and (7, 9).

A) (3, 6)

B) (4, 6) [CORRECT]

C) (4, 5)

D) (8, 12)

20. A cylinder has $r = 4$ cm and $h = 10$ cm. Volume? (Use $\pi \approx 3.14$)

A) 482

B) 502 [CORRECT]

C) 522

D) 251

21. The area of a circle is 154 cm^2 . Approximate radius? (Use $\pi \approx 3.14$)

A) 5 cm

B) 7 cm [CORRECT]

C) 10 cm

D) 14 cm

22. Distance between (0, 0) and (3, 4)?

A) 5 [CORRECT]

B) 7

C) 12

D) 25

23. A cone has $r = 4$ cm and $h = 12$ cm. Find volume and surface area. Use $V = \frac{1}{3}\pi r^2 h$ and $SA = \pi r^2 + \pi r \ell$ ($\ell = \sqrt{r^2 + h^2}$).

Answer: $V = 201 \text{ cm}^3$. Slant $\ell = \sqrt{4^2 + 12^2} = 12.65$. $SA = 209.1 \text{ cm}^2$.



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Data & Probability

Analyze data sets, calculate statistics, and determine probability.

24. Data: 12, 15, 15, 18, 20, 22, 25. The IQR is:

A) 5

B) 7 [CORRECT]

C) 8

D) 10

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

A) $1/6$

B) $1/12$

C) $7/36$

D) $6/36$ [CORRECT]

26. A scatter plot shows negative correlation. This means:

A) $x?$, $y?$

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

C) No relationship

D) $x = y$

27. Which sampling method is least biased?

A) Convenience

B) Voluntary

C) Simple random [CORRECT]

D) Self-selected

28. A class of 30 students took a test. Mean = 72, median = 75. One student scored 20. How does removing that outlier affect the mean vs. the median? Explain.

Answer: Removing the outlier raises the mean significantly (new mean ? 73.8). The median changes little because it depends on the middle value, not extremes.



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Financial Literacy

Simple interest, tax, budgeting, and financial decision-making.

29. You invest \$480 at 3% simple interest for 4 years. How much interest?

A) \$47.6

B) \$57.6 [CORRECT]

C) \$67.6

D) \$14.4

30. A jacket costs \$89.99 plus 13% HST. Total?

A) \$100.69

B) \$101.69 [CORRECT]

C) \$102.69

D) \$93.69

31. Which is a fixed expense?

A) Movie tickets

B) Rent [CORRECT]

C) Clothing

D) Restaurant meals

32. A 15% tip on a \$42 meal is:

A) \$5.30

B) \$6.30 [CORRECT]

C) \$7.30

D) \$8.30

33. Maya earns \$15.50/hr, works 25 hrs/week. Deductions are 22% of gross. Find weekly net pay.

Answer: Gross = $15.50 \times 25 = \$387.50$. Deductions = $0.22 \times 387.50 = \$85.25$. Net = $\$302.25$.



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