



Grade 9 Math Practice — Grade 9 (Set 3)

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
- C) 18
- D) 8

2. Evaluate: $144 \div 49$

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

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

- A) 4
- B) 8
- C) 16
- D) 32

4. Express 0.6 as a fraction.

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

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

- A) 25
- 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.

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Algebra & Coding*Expand, factor, and solve equations.***7.** Expand and simplify: $3(2x - 4) + 5x$

- A) $11x - 12$
- B) $11x - 4$
- C) $6x - 12$
- D) $11x + 12$

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

- A) $x = 5$
- B) $x = 3$
- C) $x = 1$
- D) $x = -5$

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

- A) $3x(2x + 3)$
- B) $x(6x + 9)$
- C) $3(2x^2 + 3x)$
- D) $6x(x + 9)$

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

- A) $3x^2 - 5x + 6$
- 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
- 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.

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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
- C) 3
- D) 4

14. A line has equation $y = \frac{2}{3}x + 7$. The y-intercept is:

- A) $\frac{2}{3}$
- B) 3
- C) 7
- D) $\frac{7}{2}$

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

- A) $y = 2x$
- B) $y = x/2$
- 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
- C) The same line
- D) Neither

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

- A) (-3.5, 0)
- 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?

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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)
- 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
- 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
- C) 10 cm
- D) 14 cm

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

- A) 5
- 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 $SA = \pi r^2 + \pi r\sqrt{r^2 + h^2}$.



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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
- C) 8
- D) 10

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

- A) $\frac{1}{6}$
- B) $\frac{1}{12}$
- C) $\frac{7}{36}$
- D) $\frac{6}{36}$

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

- A) $x?$, $y?$
- B) $x?$, $y?$
- C) No relationship
- D) $x = y$

27. Which sampling method is least biased?

- A) Convenience
- B) Voluntary
- C) Simple random
- 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.



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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
- C) \$67.6
- D) \$14.4

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

- A) \$100.69
- B) \$101.69
- C) \$102.69
- D) \$93.69

31. Which is a fixed expense?

- A) Movie tickets
- B) Rent
- C) Clothing
- D) Restaurant meals

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

- A) \$5.30
- B) \$6.30
- 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.



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