



EQAO Grade 9 Math Practice (MTH1W) — Answer Key

Ontario De-streamed — Algebra, Linear Relations, Geometry, Data & Financial Literacy

Number & Operations

Exponents, roots, rationals, and order of operations.

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

A) 14

B) 16 [CORRECT]

C) 18

D) 8

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

A) 5 [CORRECT]

B) 7

C) 9

D) 3

3. Express 0.6 repeating as a fraction.

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

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

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

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

4. Simplify: $(2^3)(2^4) \div 2^5$

A) 2^2 [CORRECT]

B) 2^7

C) 2^{12}

D) 4



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Algebra & Coding

Expanding, factoring, and solving equations.

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

A) $11x - 12$ [CORRECT]

B) $11x - 4$

C) $6x - 12$

D) $11x + 12$

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

A) $x = 5$ [CORRECT]

B) $x = 3$

C) $x = 1$

D) $x = -5$

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

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

B) $x(6x + 9)$

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

D) $6x(x + 9)$

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

Answer: Let width = w . Length = $2w + 3$. Perimeter: $2(w + 2w + 3) = 58 \Rightarrow 6w + 6 = 58 \Rightarrow 6w = 52 \Rightarrow w = 8.67$ cm (approx). So width is about 8.67 cm and length is about 20.33 cm. With exact fractions: $w = \frac{26}{3}$ cm, $l = \frac{61}{3}$ cm.



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Linear Relations

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

9. What is the slope of the line passing through (2, 5) and (6, 13)?
- A) 1
B) 2 [CORRECT]
C) 3
D) 4
10. A line has equation $y = -3x + 7$. What is its y-intercept?
- A) -3
B) 3
C) 7 [CORRECT]
D) -7
11. Which equation represents a line with slope $\frac{1}{2}$ passing through the origin?
- A) $y = 2x$
B) $y = x/2$ [CORRECT]
C) $y = x + \frac{1}{2}$
D) $y = (x+1)/2$
12. A cell phone plan costs \$25/month plus \$0.05 per text message. Write the equation for total monthly cost C in terms of number of texts t . How much does 200 texts cost?
Answer: $C = 25 + 0.05t$. For 200 texts: $C = 25 + 0.05(200) = 25 + 10 = \35 .

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Geometry (Analytic & Measurement)*Distance, midpoint, area, volume, and circle properties.*

13. Find the midpoint of the segment from A(1, 3) to B(7, 9).

A) (3, 6)

B) (4, 6) [CORRECT]

C) (4, 5)

D) (8, 12)

14. A cylinder has radius 5 cm and height 10 cm. What is its volume? (Use $\pi = 3.14$)

A) 157 cm³

B) 314 cm³

C) 785 cm³ [CORRECT]

D) 1570 cm³

15. The area of a circle is 154 cm². What is the approximate radius? (Use $\pi = 3.14$)

A) 5 cm

B) 7 cm [CORRECT]

C) 10 cm

D) 14 cm

16. Two lines have slopes of $\frac{2}{3}$ and $-\frac{3}{2}$. Are they parallel, perpendicular, or neither? Explain.

Answer: Perpendicular. The product of slopes is $(\frac{2}{3})(-\frac{3}{2}) = -1$. When slopes multiply to -1, the lines are perpendicular.



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Data & Probability

17. A data set has values: 12, 15, 15, 18, 20, 22, 25. What is the interquartile range (IQR)?

A) 5

B) 7 [CORRECT]

C) 8

D) 10

18. Two dice are rolled. What is the probability that the sum is 7?

A) $\frac{1}{6}$

B) $\frac{1}{12}$

C) $\frac{7}{36}$

D) $\frac{6}{36}$ [CORRECT]

19. A scatter plot shows a negative correlation. Which best describes the trend?

A) As x increases, y increases

B) As x increases, y decreases [CORRECT]

C) There is no relationship

D) x and y are equal



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Financial Literacy

20. You invest \$500 at 4% simple interest per year. How much interest do you earn after 3 years?

A) \$20

B) \$40

C) \$60 [CORRECT]

D) \$80

21. A pair of shoes costs \$89.99 plus 13% HST. What is the total cost?

A) \$100.69

B) \$101.69 [CORRECT]

C) \$102.69

D) \$93.69

22. Maya earns \$15.50/hour and works 25 hours per week. Her deductions are 22% of gross pay. What is her weekly net pay?

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



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