

Important Concepts . . .

Preview Review



Mathematics Grade 9 TEACHER KEY
W2 - Quiz

Important Concepts of Grade 9 Mathematics

W1 - Lesson 1	Powers
W1 - Lesson 2	Exponents
W1 - Lesson 3	Rational Numbers
W1 - Lesson 4	Order of Operations
W1 - Lesson 5	Square Roots of Rational Numbers
W1 - Review	
W1 - Quiz	
W2 - Lesson 6	Graphing Linear Relations
W2 - Lesson 7	Solving Linear Relations
W2 - Lesson 8	Linear Inequalities
W2 - Lesson 9	Polynomials
W2 - Lesson 10	Surface Area of 3D Objects
W2 - Review	
W2 - Quiz	
W3 - Lesson 11	Properties of Circles
W3 - Lesson 12	Polygons and Scale Diagrams
W3 - Lesson 13	Rotational Symmetry
W3 - Lesson 14	Representing Data
W3 - Lesson 15	Probability
W3 - Review	
W3 - Quiz	

Materials Required

Paper
Pencil
Calculator

**No Textbook
Required**

**This is a stand-
alone course.**

Mathematics Grade 9

Version 6

Preview/Review W2 - Quiz

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Preview/Review Concepts for Grade Nine Mathematics

Teacher Key



W2 - Quiz

QUIZ

This quiz should take between 25 and 40 minutes.

A pencil, eraser, and a scrap piece of paper (for rough work) are the only materials allowed for the quiz.

Teacher may choose to weight each question differently.

Print your name neatly on the quiz.

Complete all questions on the quiz.

Hand in the quiz when you complete it.

Week 2 - Quiz

Part 1: Multiple-Choice

Be sure to read each question carefully. Write the letter of the **best** answer in the blank in front of each question. Each multiple choice is worth 1 mark.

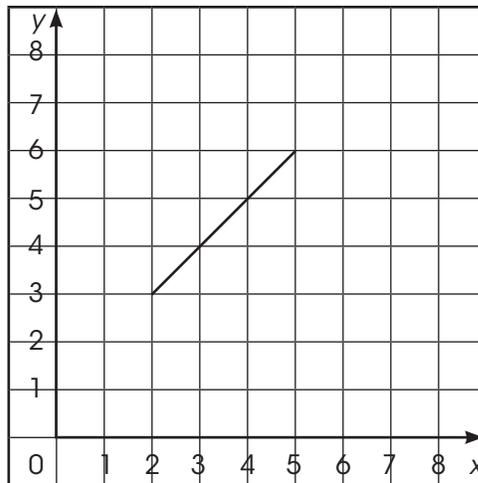
 A 1. Which of the following is the equation that matches the given table of values?

- A. $4x + 1$
- B. $5x - 1$
- C. $3x + 2$
- D. $2x + 3$

1	5
2	9
3	13
4	17

 D 2. Which of the following equations matches the graph below?

- A. $y = x + 4$
- B. $y = x + 3$
- C. $y = x + 2$
- D. $y = x + 1$



 C 3. Which expression represents the table of values?

x	-1	0	2	-5	1
y	-2	8	28	-42	18

- A. $y = 12x$
- B. $y = 8x + 4$
- C. $y = 10x + 8$
- D. $y = 18x$

B 4. Solve for x in the following equation.

$$\frac{x}{6} = 3$$

- A. 2
- B. 18
- C. 9
- D. 12

A 5. Solve for y in the following equation.

$$-\frac{5.2}{y} = -3.25$$

- A. $y = 1.6$
- B. $y = 0.625$
- C. $y = -1.6$
- D. $y = -0.625$

D 6. Solve for d in the following equation.

$$\frac{4}{d} = -\frac{1}{8}$$

- A. 2
- B. -2
- C. 32
- D. -32

D 7. Solve for a in the following equation.

$$-\frac{1}{3} - \frac{3a}{2} = \frac{1}{6}$$

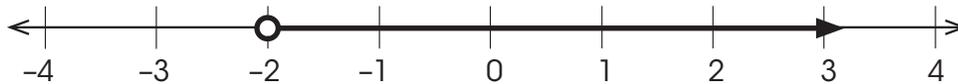
A. $a = -\frac{1}{9}$

B. $a = \frac{3}{1}$

C. $a = \frac{1}{9}$

D. $a = -\frac{1}{3}$

C 8. What is the inequality for the following graph?



A. $x < -2$

B. $x \leq -2$

C. $x > -2$

D. $x \geq -2$

B 9. Which solution does **not** satisfy the inequality $x \geq 8$.

A. $\frac{16}{2}$

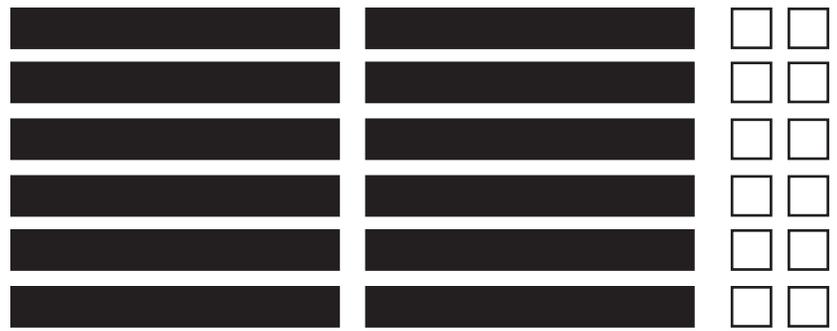
B. 0

C. 8

D. 55.75

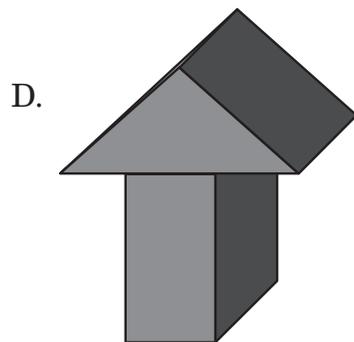
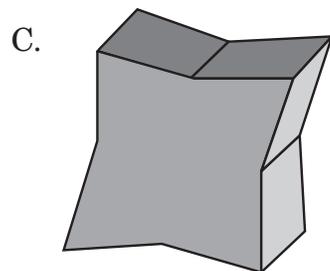
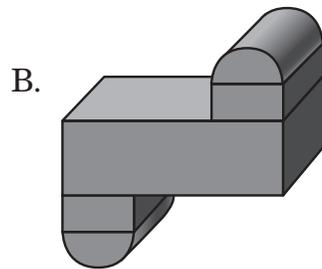
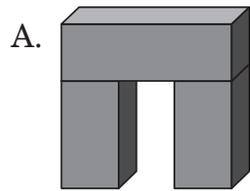
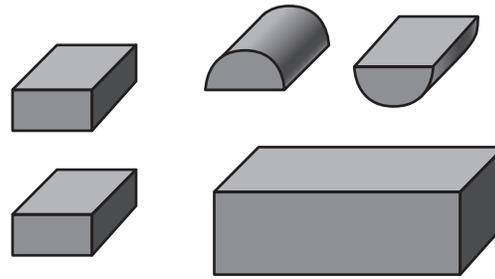
- D 10. A concert is being held at the local arena. Ticket prices (t) are based on a seating chart. The cheapest seats are \$14.50 while the most expensive seats are \$45.00. Each inequality below, **except one**, represents the above information. Which inequality does **NOT** represent the cost of a concert tickets?
- A. $t \leq \$45.00$
 - B. $t \geq \$14.50$
 - C. $t > \$14.49$
 - D. $t < \$14.50$
- D 11. Which expression is a trinomial?
- A. abc^3
 - B. $-1 + v - t^2$
 - C. $pq + r^2$
 - D. $3xy$
- B 12. What is the product of $3y$ and $3.5y$?
- A. $10.5y$
 - B. $10.5y^2$
 - C. $6.5y^2$
 - D. $6.5y$
- C 13. What is the product of $\left(\frac{2}{3}\right)(-3a - 6)$.
- A. $2a - 4$
 - B. $-2a - 4$
 - C. $-2a - 4a$
 - D. $2a^2 - 4a$

B 14. Which of the following quotients is represented in the tiles below?



- A. $\frac{12x - 12}{2}$
- B. $\frac{-12x + 12}{2}$
- C. $\frac{-12x - 12}{2}$
- D. $\frac{12x + 12}{2}$

B 15. The following objects make up which composite shape?



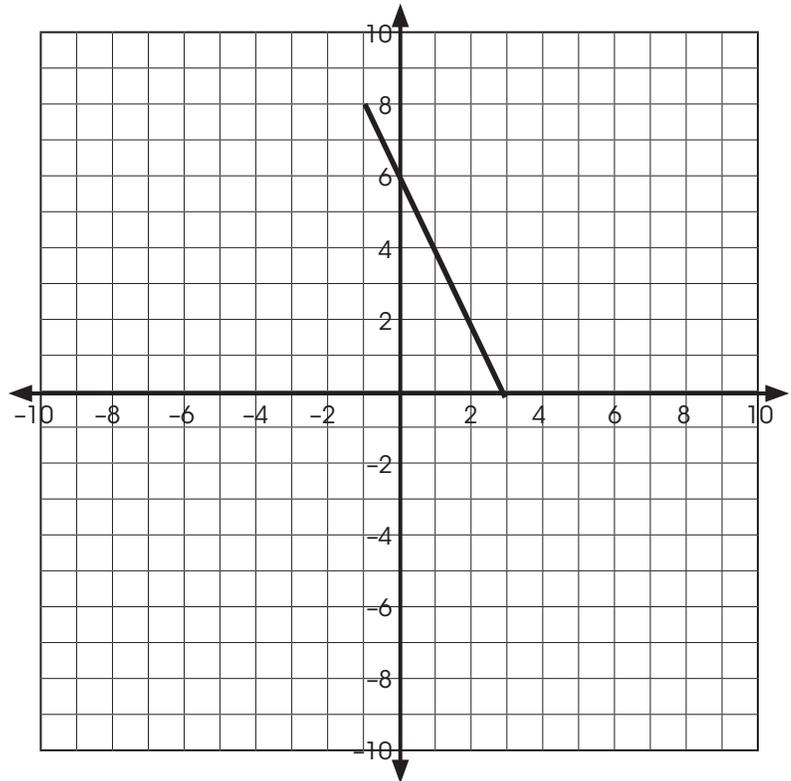
Part 2: Short Answer

Show all your work. Simplify the answer to lowest terms when necessary.

1. Create a table of values and graph for the following equation.

$$y = -2x + 6$$

x	y
-1	8
0	6
1	4
2	2
3	0



2. Solve each of the following. Verify your answer for a.

a. $a + 12 = 2a - 5$

$$\begin{aligned} a - a + 12 &= 2a - a - 5 \\ 12 + 5 &= a - 5 + 5 \\ 17 &= a \end{aligned}$$

Verification

$$\begin{aligned} a + 12 &= 2a - 5 \\ (17) + 12 &= 2(17) - 5 \\ 29 &= 34 - 5 \\ \text{Left Side} &= \text{Right Side} \end{aligned}$$

b. $2.8(3d - 2) = -12.32$

$$\begin{aligned} 8.4d - 5.6 &= -12.32 \\ 8.4d - 5.6 + 5.6 &= -12.32 + 5.6 \\ 8.4d &= -6.72 \\ \frac{8.4d}{8.4} &= \frac{-6.72}{8.4} \\ d &= -0.8 \end{aligned}$$

c. $\frac{1}{3}p + \frac{3}{9} = \frac{11}{18}p$

$$\begin{aligned} (18)\frac{1}{3}p + (18)\frac{3}{9} &= (18)\frac{11}{18}p \\ 6p + 6 &= 11p \\ 6p - 6p + 6 &= 11p - 6p \\ 6 &= 5p \\ \frac{6}{5} &= \frac{5p}{5} \\ \frac{6}{5} &= p \\ p &= 1\frac{1}{5} \end{aligned}$$

3. Solve the following inequalities.

a. $2x - 3 < -3x + 22$

$$\begin{aligned} 2x - 3 + 3 &< -3x + 22 + 3 \\ 2x &< -3x + 25 \\ 2x + 3x &< -3x + 3x + 25 \\ 5x &< 25 \\ \frac{5x}{5} &< \frac{25}{5} \\ x &< 5 \end{aligned}$$

b. $16x + 10 > -14x - 5$

$$\begin{aligned} 16x - 16x + 10 &> -14x - 16x - 5 \\ 10 + 5 &> -30x - 5 + 5 \\ \frac{15}{-30} &< \frac{-30x}{-30} \\ -\frac{15x}{30} &< x \\ x &> -\frac{1}{2} \end{aligned}$$

4. When a number is tripled and then increased by 4, the result is greater than or equal to 31.

- a. Represent the inequality.

$$3x + 4 \geq 31$$

- b. Solve the inequality.

$$3x + 4 - 4 \geq 31 - 4$$

$$3x \geq 27$$

$$\frac{3x}{3} \geq \frac{27}{3}$$

$$x \geq 9$$

- c. Represent the inequality on a number line.



5. Solve the following.

a. $(2x^2 - 8x + 6) + (9x^2 + 4x - 1)$

$$= 2x^2 + 9x^2 - 8x + 4x + 6 - 1$$

$$= 11x^2 - 4x + 5$$

b. $(4 - 6v) - (3 - 8v)$

$$= 4 - 6v + -3 + 8v$$

$$= -6v + 8v + 4 - 3$$

$$= 2v + 1$$

6. Find the product.

a. $(-2x)(-2x + 1)$
 $= 4x^2 - 2x$

b. $(-3.2x)(-2.7y)$
 $= 8.64xy$

c. Use algebra tiles to model your answer for 6a.



7. Find the quotient.

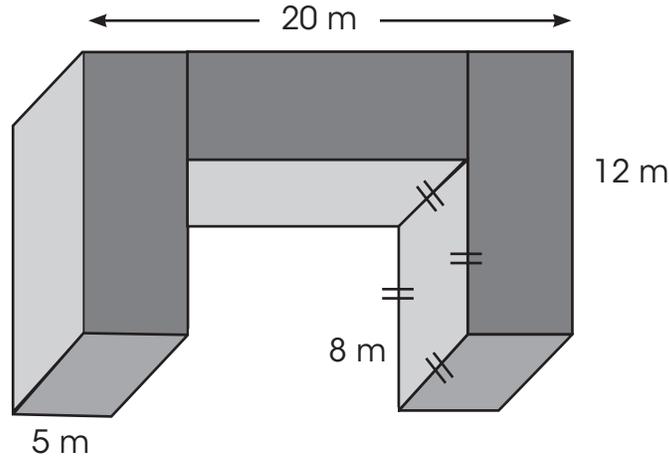
a. $\frac{12n^2 - 2n}{2n}$
 $= 6n - 1$

b. $\frac{2x^2 + 3x}{-3}$
 $= \frac{-2x^2}{3} - 1$

c. Use algebra tiles to model your answer for 7a.



8. Determine the surface area of the following composite shape.



Shape A and B: Column

$$SA = 2(lh) + 2(lw) + 2(hw)$$

$$SA = 2(5 \times 12) + 2(5 \times 8) + 2(12 \times 8)$$

$$SA = 120 + 80 + 192$$

Shape A SA = 192 cm²

Shape B SA = 192 cm²

SA Shape C: Middle

$$SA = 2(lh) + 2(lw) + 2(hw)$$

$$SA = 2(10 \times 4) + 2(10 \times 8) + 2(4 \times 8)$$

$$SA = 80 + 160 + 64$$

$$SA = 304 \text{ cm}^2$$

Overlap on Column

$$\text{Area} = lw$$

$$A = 8 \times 4$$

$$A = 32 \text{ cm}^2$$

Shape A overlap = 32 + 32 (from middle) = 64 cm²

Shape B overlap = 32 + 32 (from middle) = 64 cm²

Total Surface Area

$$SA = A + B + C - \text{overlap}$$

$$SA = 192 + 192 + 304 - 128$$

$$SA = 560 \text{ cm}^2$$

