

Answer Key

1. What is the general form of a linear equation in two variables?

Solution:

- A. $ax + b = 0$ B. $ax + by = c$ C. $ax^2 + by^2 = c$ D. $ax^2 + bx + c = 0$

2. What is the x-coordinate of the y-intercept of a linear equation?

Solution:

- A. 0 B. 1 C. The slope of the line D. The coefficient of x

3. What is the first step in multiplying rational algebraic expressions?

Solution:

- A. Simplify the expressions to their lowest terms.
B. Multiply the numerators and denominators separately.
C. Factor the expressions before multiplying.
D. Cross-cancel any common factors.

4. The rectangular coordinate system is also known as:

Solution:

- A. The x-y axis B. The Cartesian plane C. The polar system D. The graphing plane

5. Which of the following is **NOT** a linear equation in two variables?

Solution:

- A. $2x = 4 + y$ B. $xy = 2$ C. $y = \frac{x}{2}$ D. $\frac{1}{4}x = y$

6. Explain the rectangular coordinate system. What are the key components of the coordinate plane?

Solution:

- A. The x-axis, y-axis, and origin C. The x-axis, y-axis, and labels
B. The x-axis, y-axis, and scale D. The x-axis, y-axis, and quadrants

7. Explain how to add and subtract rational algebraic expressions. What are the steps involved in performing these operations?

Solution:

- A. Simplify the expressions to their lowest terms.
B. Divide the numerators and denominators separately.
C. Multiply the numerators and denominators separately.
D. Find the least common denominator and combine like terms.

8. In the slope-intercept form of linear equations, what do m and b represent?

Solution:

- A. m-intercept and b-intercept C. Slope and x-intercept
B. x-intercept and y-intercept D. Slope and y-intercept

9. Use the concept of division of rational algebraic expressions to simplify the expression $\frac{14x^2}{20y^2} \div \frac{56x^2}{y}$.

Solution:

- A. $\frac{1}{8x}$ B. $\frac{1}{8y}$ C. $\frac{1}{80x}$ D. $\frac{1}{80y}$

10. Apply the concept of multiplication of rational algebraic expressions to simplify the expression $\frac{12mn^2}{6xy^2} \cdot \frac{9x^2y^2}{4m^2n^2}$.

Solution:

- A. $\frac{9m}{2}$ B. $\frac{9x}{2}$ C. $-\frac{9m}{2}$ D. $-\frac{9x}{2}$

11. Apply the subtraction of rational algebraic expressions to simplify the expression $\frac{6}{3a-9} - \frac{3}{3a-9}$.

Solution:

A. $\frac{1}{a-3}$

B. $\frac{1}{a-4}$

C. $\frac{2}{a-3}$

D. $\frac{2}{a-4}$

12. Use the addition of rational algebraic expressions to simplify the expression $\frac{x^2-3x-7}{x^2-9} + \frac{x^2-2x+4}{x^2-9}$.

Solution:

A. $\frac{2x}{x+3}$

B. $\frac{2x+1}{x+3}$

C. $\frac{3x}{x+3}$

D. $\frac{3x+1}{x+3}$