

# Algebra Study Guide - For Test Out

## Questions

The sum of two numbers is 30 and the difference of the numbers is 12. What are the two numbers?

Answers  
9, 21

Eighty percent of the children preferred the wild goose ride to the ferris wheel. If 300 children preferred the ferris wheel, how many preferred the wild goose ride?

1200

At 3 p.m., Brunhilde headed North at 30 km/hr. Two hours later Ludwig headed South at 40 km/hr. At what time will they be 340 km apart?

9 p.m.

Simplify:

Questions

Answer

$$\frac{4x^2+8x}{x^2+8x+12} \div \frac{4x^2-16}{x^2+3x-18}$$

$$\frac{x(x-3)}{(x+2)(x-2)}$$

$$3\sqrt{2} \cdot 4\sqrt{3} \cdot 4\sqrt{6} \cdot 3\sqrt{2}$$

$$288 \cdot 3\sqrt{2}$$

$$3\sqrt{2}(5\sqrt{2} - 6\sqrt{36})$$

$$30\sqrt{6} - 108\sqrt{2}$$

$$\frac{xy - y^{-1}}{xy^{-1} - 4}$$

$$\frac{xy^2 - 1}{x - 4y}$$

$$-3^0 [(-3^2+4)(-2^2-2) - (-2)+4] - \sqrt[3]{-8}$$

$$-34$$

$$\frac{(0.00035 \times 10^{15})(200,000)}{(1000 \times 10^{-45})(0.00007)}$$

$$1.0 \times 10^{63}$$

Solve:

Questions

Answer

$$\begin{aligned} y &= 2x + 4 \\ 2y - x &= -1 \end{aligned}$$

$$(-3, -2)$$

$$\begin{aligned} 5x - 2y &= 18 \\ 3x + y &= 24 \end{aligned}$$

$$(6, 6)$$

$$\frac{k-4}{2} - \frac{k+6}{3} = 5$$

$$54$$

$$m - m^0(m-4) - (-2)m + (-2)(m-4^0) = m - 6$$

$$12$$

Expand by using the distributive property. Write the answer with all exponents positive.

$$4x^2y^{-1} \left( \frac{0}{x^2} - 3x^{-2}y^4 - \frac{2}{x^{-2}y^{-1}} \right)$$

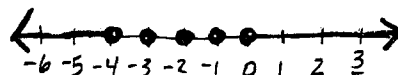
Answer

$$4 - 12y^3 - 8x^4$$

Graph on a number line:

$$-4 \leq x < 1; D = \{\text{Integers}\}$$

Answer



Graph on a rectangular coordinate system:

A)  $y = \frac{3}{4}x - 1$

B)  $2x + 4y = 4$

C)  $x = -\frac{3}{2}$

