

Algebra 1 Sample Problems

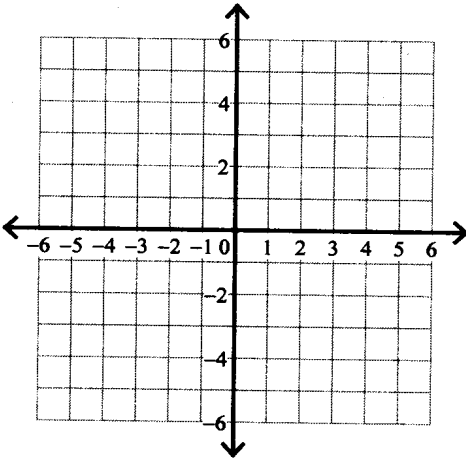
Solve each equation.

1) $39 + 6b = 3(6 + b)$

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

Sketch the graph of the line. (Do not use a Table).

3) $5x + 3y = 15$



Find the slope of the line through the pair of points.

4) $(-9, 9), (17, -20)$

Write the slope-intercept form of the equation of the line through the given points.

5) through: $(-1, -2)$ and $(-3, 0)$

Solve the system by elimination.

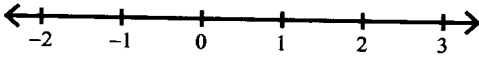
6) $-9x - 2y = -4$
 $-18x + y = 2$

Solve the system by substitution.

$$7) \begin{aligned} x - y &= -3 \\ -2x - 6y &= 14 \end{aligned}$$

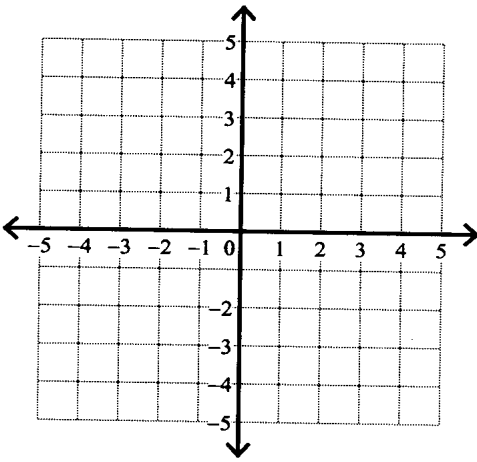
Solve the inequality and graph its solution.

$$8) 6x - 8(1 + 4x) \leq -40 + 6x$$



Sketch the solution to the system of inequalities.

$$9) \begin{aligned} y &\leq 2x - 3 \\ y &\geq \frac{1}{3}x + 2 \end{aligned}$$

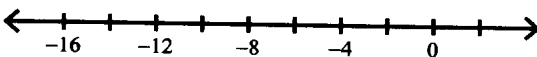


Solve the equation.

$$10) |x + 2| - 10 = -9$$

Solve the inequality and graph its solution.

$$11) -4 + |x + 8| < 4$$



Simplify. Your answer should contain only positive exponents.

$$12) \frac{(2uv^{-3})^2}{2u^4v^{-3} \cdot 2u^{-1}v^{-1}}$$

Factor each completely.

$$13) x^2 - 2x - 3$$

$$14) 18v^2 + 58v + 12$$

- 15) 3 lb of soybean oil which costs \$1/lb were combined with 6 lb of canola oil which costs \$4/lb. Find the cost per lb of the mixture.

Find the product.

$$16) (4x + 8)(3x + 8)$$

Solve the equation with the quadratic formula.

$$17) 2x^2 - 12x = 144$$

- 18) A jet left New York flying west three hours before a passenger plane. The passenger plane flew in the opposite direction going 30 mph faster than the jet for seven hours after which time the planes were 3780 mi. apart. Find the jet's speed.

Solve. Round your answer to the nearest hundredth.

- 19) Working alone, Sarawong can clean an attic in 11 hours. James can clean the same attic in 13 hours. Find how long it would take them if they worked together.