

Solve the equation.

1) $\frac{2}{5}x - \frac{1}{3}x = 3$

2) $12(x - 48) = 24$

3) $\frac{3x-6}{3} + \frac{5x+9}{5} = -2$

Solve by completing the square.

4) $x^2 = 7 - 4x$

5) $4x^2 + 32 = 24x$

Solve the equation graphically by finding x-intercepts.

6) $|5x - 6| = 5$

7) $2x^2 + 11x + 1 = 0$

Simplify the expression. Assume that the variables in the denominator are nonzero.

8) $\left(\frac{30a^7b^7}{ab^4}\right)\left(\frac{2b^2}{6a^3b^9}\right)$

9) $\left(\frac{3}{xy^2}\right)^{-2}$

Solve the equation by extracting the square roots.

10) $3(v+2)^2 = 45$

Use interval notation to describe the interval of real numbers.

11) x is negative.

12) $-5 \leq x < -1$

Solve the equation using the quadratic formula.

13) $x^2 - 6x + 2 = 0$

Solve the inequality.

14) $8 \geq \frac{4x+2}{3} \geq -4$

Solve the equation by factoring.

15) $5x^2 - 34x - 7 = 0$

Write the following inequality in interval notation, give its type, and describe it in words.

16. $-3 \leq x < 10$

Write the following interval as an inequality

17. $(-\infty, 0]$

Graph the inequality

18. $-6 < x \leq 2$