

Solve each equation by factoring.

1) $2x^2 - 5x - 7 = 0$

2) $x^2 - 17x = -72$

3) $3x^2 + 12x = 0$

Solve each equation using complete the square.

4) $x^2 + 14x - 47 = 0$

5) $\frac{1}{2}x^2 + 8x = 1$

6) $x^2 - 10x = -9$

Solve each equation using the quadratic formula (either by calculator or by hand).

7) $x^2 + 3x + 11 = 0$

8) $5x^2 + 2x = 8$

Solve each equation using any method.

9) $4x^2 = 9$

10) $\frac{-10}{x} = \frac{x+1}{-3}$

Determine the vertex using the form: $y = a(x - h)^2 + k$, the axis of symmetry, and the direction of opening.

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

12) $f(x) = x^2 + 10x - 35$

13) $y = -2x^2 + 24x - 59$

V= _____

aos: _____

opens: _____

V= _____

aos: _____

opens: _____

V= _____

aos: _____

opens: _____

Determine the vertex using $x = \frac{-b}{2a}$

14) $f(x) = -x^2 + 10x - 18$

15) $y = 4x^2 - 8x + 7$

16) $y = -6x^2 + 13$

V= _____

V= _____

V= _____

Graph the following quadratic equations using either method. Make sure there are a total of 5 points (including the vertex).

17) $y = x^2 - 2x - 5$

18) $f(x) = -3x^2 + 18x - 22$

