

## Vertex Form and Quadratic Formula

**Re-write each equation in vertex form. Identify the vertex.**

1)  $b^2 - 16b - 23 = -6$

2)  $x^2 + 8x - 39 = 9$

3)  $v^2 + 12v + 36 = 9$

4)  $v^2 - 12v + 22 = -7$

5)  $r^2 + 4r - 4 = 5$

6)  $x^2 + 12x - 94 = -9$

7)  $4x^2 - 16x - 25 = -5$

8)  $5x^2 + 10x - 13 = -8$

**Solve each equation with the quadratic formula.**

9)  $2x^2 + 6x - 108 = 0$

10)  $2v^2 - 11v - 13 = 0$

$$11) 6m^2 - 10m - 24 = 0$$

$$12) 5n^2 + 11n - 36 = 0$$

$$13) 3x^2 + 2x - 6 = 4$$

$$14) 4b^2 - 7b + 4 = 5$$

$$15) 3k^2 + 11k - 134 = 10$$

$$16) 2n^2 - 11n - 93 = 12$$

$$17) n^2 - 5n = 9$$

$$18) 12v^2 + 6v + 6 = -2$$

$$19) n^2 + 18 = 9$$

$$20) p^2 + 10p + 12 = -4$$