

5.3 Quadratic Formula

Find the discriminant of each quadratic equation then state the number and type of solutions.

1) $x^2 - 9x - 10 = 0$

2) $-2b^2 + 8b - 8 = 0$

3) $-9x^2 - 6x - 1 = 0$

4) $7n^2 + 4n + 9 = 0$

5) $7v^2 + 3v + 9 = 0$

Solve each equation with the quadratic formula.

6) $6m^2 - 10m - 16 = 0$

7) $3x^2 + 9x - 30 = 0$

8) $2k^2 - 3k - 77 = 0$

9) $6n^2 - 5n - 69 = 0$

$$10) x^2 + 6x - 91 = 0$$

$$11) -v = -3v^2 + 70$$

$$12) 2x^2 + 6x = -4$$

$$13) -87 = -6k^2 + 11k$$

$$14) 3x^2 = -7 + 10x$$

$$15) -4 = -6r^2 - 2r$$

$$16) 4k^2 = 16$$

Simplify.

17) $(-2i) + 5 + (-3 + 8i)$

18) $(-8 + 7i) - (8 + 7i)$

19) $(-3 + 4i)^2$

20) $(1 - 8i)(-8 - 5i)$

21) $(8 + 3i)(1 - 7i)$

22) $(5 + 6i)(-8 + 8i)$

23) $\sqrt{-98n^2}$

24) $\sqrt{-343b}$

25) $\sqrt{-256n^4}$