

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

1) $-2a^2 - 8a - 15 = -7$

- A) 0; two imaginary solutions
 B) 0; one real solution
 C) 128; two real solutions
 D) 0; two real solutions

2) $-b^2 - 6b - 11 = -2$

- A) 0; two imaginary solutions
 B) 72; two real solutions
 C) 0; two real solutions
 D) 0; one real solution

3) $6x^2 + x - 11 = -6$

- A) 121; one real solution
 B) 121; two real solutions
 C) -119; two imaginary solutions
 D) 1; two imaginary solutions

4) $-3v^2 + 6v - 10 = -7$

- A) 72; two real solutions
 B) 0; one real solution
 C) 81; two real solutions
 D) -32; two imaginary solutions

Simplify.

5) $(1 - 3i) + (-4 - 4i)$

- A) $5 + i$ B) $-3 + i$
 C) $-3 - i$ D) $-3 - 7i$

6) $(-3 + 7i) - (-7 + 7i)$

- A) $-10 + 14i$ B) 4
 C) 10 D) $10 - 14i$

7) $(-4 + 5i)^2$

- A) $-9 - 40i$ B) 4
 C) $-9 + 40i$ D) $-16 - 30i$

8) $(-2 + 4i)(-8 - 7i)$

- A) $-12 - 46i$ B) $12 + 46i$
 C) $44 - 18i$ D) $-12 + 46i$

Solve each equation.

9) $-6x^2 = -144$

- A) $\{2\sqrt{6}, -2\sqrt{6}\}$ B) $\{1\}$
 C) $\{3, -3\}$ D) $\{1, -1\}$

10) $2k^2 - 7 = -19$

- A) $\{1, -1\}$ B) $\{i\sqrt{6}, -i\sqrt{6}\}$
 C) $\{1\}$ D) $\{9, -9\}$

11) $n^2 - 16 = 0$

- A) $\{-4, 4\}$ B) $\{4, 1\}$
 C) $\{-4, 0\}$ D) $\{-3, -1\}$

12) $x^2 - 2x - 15 = 0$

- A) $\{-5, -4\}$ B) $\{2, 0\}$
 C) $\{-5, 3\}$ D) $\{5, -3\}$

13) $x^2 = -12x - 32$

- A) $\{-4, -8\}$ B) $\{5, 0\}$
 C) $\{7, -7\}$ D) $\{-2, -8\}$

14) $p^2 - 5p + 6 = 0$

- A) $\{4, -3\}$ B) $\{3, -7\}$
 C) $\{5, -4\}$ D) $\{3, 2\}$

15) $x^2 = -4x + 5$

- A) $\{3 + 2\sqrt{6}, 3 - 2\sqrt{6}\}$
 B) $\{5 + \sqrt{19}, 5 - \sqrt{19}\}$
 C) $\{1, -5\}$
 D) $\{-3 + 2\sqrt{6}, -3 - 2\sqrt{6}\}$

16) $7k^2 = -7$

- A) $\left\{\frac{-7 + i\sqrt{23}}{18}, \frac{-7 - i\sqrt{23}}{18}\right\}$
 B) $\{i, -i\}$
 C) $\{1, -1\}$
 D) $\left\{\frac{i}{2}, -\frac{i}{2}\right\}$

17) $-8x^2 - 2x = 6x + 1 - 5x^2$

- A) $\left\{\frac{-4 - \sqrt{13}}{3}, \frac{-4 + \sqrt{13}}{3}\right\}$
 B) $\{-4 + \sqrt{17}, -4 - \sqrt{17}\}$
 C) $\left\{\frac{4 - \sqrt{13}}{3}, \frac{4 + \sqrt{13}}{3}\right\}$
 D) $\left\{\frac{4 - \sqrt{19}}{3}, \frac{4 + \sqrt{19}}{3}\right\}$

18) $7m^2 - 13 = -m^2$

- A) $\left\{\frac{\sqrt{3}}{2}, -\frac{\sqrt{3}}{2}\right\}$
 B) $\{\sqrt{13}, -\sqrt{13}\}$
 C) $\left\{\frac{\sqrt{26}}{4}, -\frac{\sqrt{26}}{4}\right\}$
 D) $\{\sqrt{3}, -\sqrt{3}\}$