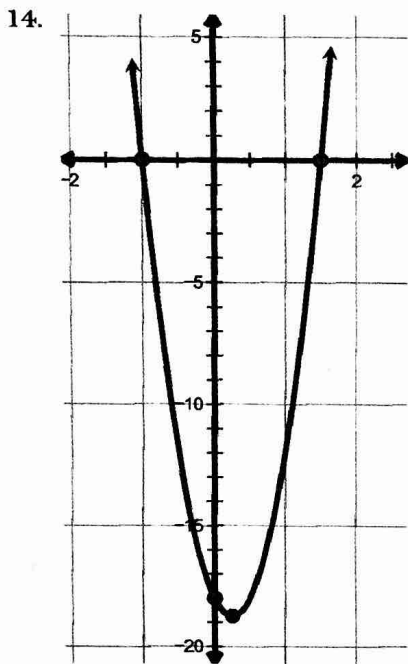


Finding Complex Roots - Answers

1. $x = \pm 2i$ 2. $x = \pm 3i$ 3. $x = \pm i\sqrt{5}$ 4. $x = \frac{3}{2} \pm \frac{i\sqrt{23}}{2}$ 5. $x = -1 \pm \frac{i\sqrt{2}}{2}$
6. $x = -1 \pm \frac{i\sqrt{10}}{2}$ 7. $x = \frac{1}{2} \pm \frac{i\sqrt{47}}{2}$ 8. $x = -1 \pm i\sqrt{3}$ 9. $x = 2 \pm i\sqrt{3}$ 10. $x = \frac{1}{4} \pm \frac{i\sqrt{15}}{4}$
11. $x = 3 \pm i\sqrt{2}$ 12. $x = -\frac{1}{2} \pm \frac{i\sqrt{15}}{2}$ 13. $x = \frac{5}{6} \pm \frac{i\sqrt{131}}{6}$



selected answers

$$2. x^2 + 9 = 0$$

$$\sqrt{x^2} = \sqrt{-9}$$

$$x = \pm \sqrt{-9}$$

$$x = \pm \sqrt{-1} \sqrt{9}$$

$$x = \pm 3i$$

because $i = \sqrt{-1}$

$$9. x^2 - 4x + 7 = 0$$

$a = 1, b = -4, c = 7$

$$x = \frac{4 \pm \sqrt{(-4)^2 - 4(1)(7)}}{2(1)}$$

$$x = \frac{4 \pm \sqrt{-12}}{2}$$

$$x = \frac{4 \pm 2i\sqrt{3}}{2}$$

$$x = 2 \pm i\sqrt{3}$$

$$4. a = 1, b = -3, c = 8$$

$$x = \frac{3 \pm \sqrt{(-3)^2 - 4(1)(8)}}{2(1)}$$

$$x = \frac{3 \pm \sqrt{9 - 32}}{2}$$

$$x = \frac{3 \pm \sqrt{-23}}{2}$$

$$x = \frac{3 \pm i\sqrt{23}}{2}$$

← can be written as 1 fraction.