SM3 6.1: Solving Square Root Equations

Solve each equation for x.

1) $\sqrt{x} = 5$

$x = 25$

2) $\sqrt{x} = 9$

$x = 81$

3) $\sqrt{x} = -3$

$x = \emptyset$

4) $\sqrt{3x} = 6$

$x = 12$

5) $\sqrt{4x} = 10$

$x = 25$

6) $\sqrt{2x} = -6$

$x = \emptyset$

7) $2\sqrt{x} = 1$

$x = \frac{1}{4}$

8) $2\sqrt{5x} = 20$

$x = 20$

9) $\sqrt{2x - 1} = 7$

$x = 25$

10) $\sqrt{3x + 7} - 7 = 0$

$x = 14$

11) $\sqrt{x^2 + 16} = x + 2$

$x = 3$

12) $\sqrt{x^2 + 5x + 10} = 2$

$x = \{-3, -2\}$

13) $\sqrt{4x - 3} - \sqrt{x + 6} = 0$

$x = 3$

14) $2x - \sqrt{16x - 12} = 0$

$x = \{1,3\}$

15) $2\sqrt{x + 6} - \sqrt{-8x} = 0$

$x = -2$

16) $\sqrt{x + 19} = \sqrt{x + 10} + 1$

$x = 6$

17) $\sqrt{7x + 1} = \sqrt{12x + 4} - 2$

$x = 5$

18) $\sqrt{5x + 6} + 3 = \sqrt{3x + 3} + 4$

$x = \{-1,2\}$

19) $x - 3 = \sqrt{10x - 54}$

$x = \{7,9\}$

20) $x + 1 = \sqrt{7x + 15}$

$x = 7$