

Solve the following equations:

1. $x^2 = 49 \Rightarrow \sqrt{x^2} = \sqrt{49} \Rightarrow x = 7$

2. $(x-3)^2 = 64 \Rightarrow \sqrt{(x-3)^2} = \sqrt{64} \Rightarrow x-3 = 8 \Rightarrow x = 11$

3. $2(3x+1)^2 - 7 = 5 \Rightarrow 2(3x+1)^2 = 12 \Rightarrow \sqrt{(3x+1)^2} = \sqrt{6} \Rightarrow 3x+1 = \sqrt{6} \Rightarrow$
 $3x = -1 + \sqrt{6} \Rightarrow x = \frac{-1 + \sqrt{6}}{3}$

4. $\sqrt{x} = 3 \Rightarrow (\sqrt{x})^2 = (3)^2 \Rightarrow x = 9$

5. $3\sqrt{x} = 5 \Rightarrow (3\sqrt{x})^2 = (5)^2 \Rightarrow 9x = 25 \Rightarrow x = \frac{25}{9}$

6. $3\sqrt{2x} + 1 = -8 \Rightarrow 3\sqrt{2x} = -9 \Rightarrow (3\sqrt{2x})^2 = (-9)^2 \Rightarrow 9 \cdot 2x = 81 \Rightarrow 18x = 81 \Rightarrow$
 $x = \frac{81}{18} = \frac{9}{2}$

7. $\sqrt{3x+1} = 4 \Rightarrow (\sqrt{3x+1})^2 = (4)^2 \Rightarrow 3x+1 = 16 \Rightarrow 3x = 15 \Rightarrow x = \frac{15}{3} = 5$

8. $2\sqrt{5x-3} = 7 \Rightarrow (2\sqrt{5x-3})^2 = (7)^2 \Rightarrow 4 \cdot (5x-3) = 49 \Rightarrow 20x - 12 = 49 \Rightarrow$
 $20x = 61 \Rightarrow x = \frac{61}{20}$

9. $\sqrt{x^2-4} = 6 \Rightarrow (\sqrt{x^2-4})^2 = (6)^2 \Rightarrow x^2 - 4 = 36 \Rightarrow x^2 = 40 \Rightarrow$
 $\sqrt{x^2} = \sqrt{40} \Rightarrow x = \sqrt{2^3 \cdot 5} \Rightarrow x = 2\sqrt{2 \cdot 5} \Rightarrow x = 2\sqrt{10}$