

Steps

1. isolate radical
2. raise power to both sides - clear radical
3. Solve and check solution - disregard extraneous solutions (these solutions produce false statements when you verify)

Example $2\sqrt{x+1} - 3 = 15$

Step 1

$$\begin{array}{r} 2\sqrt{x+1} - 3 = 15 \\ +3 \quad +3 \\ \hline 2\sqrt{x+1} = \frac{18}{2} \end{array}$$

Step 2

$$\begin{array}{l} \sqrt{x+1} = 9 \\ (\sqrt{x+1})^2 = 9^2 \\ x+1 = 81 \\ x = 80 \end{array}$$

Step 3

$$\begin{array}{l} 2\sqrt{x+1} - 3 = 15 \\ \uparrow \\ \text{plug in } x=80 \\ 2\sqrt{80+1} - 3 = 15 \\ 2\sqrt{81} - 3 = 15 \\ 2 \cdot 9 - 3 = 15 \\ 18 - 3 = 15 \\ 15 = 15 \\ \text{True} \rightarrow \end{array}$$

Therefore $x=80$ is the solution