Equations containing Radicals

Algorithm

1. **Isolate the radical.**
2. **Raise both sides of the equation to a power equal to the index.**
3. **Solve the resulting equation**
4. **Check carefully each apparent root in the original equation, rejecting any which are extraneous.**

Example

Solve:

1. $\sqrt{x} = 2$
2. $\sqrt{x} = 3$
3. $\sqrt{x+5} = 5$
4. $\sqrt{x-2} = 4$
5. $\sqrt{x-1} = 2$
6. $\sqrt[3]{x-2} = 3$
7. $\sqrt[4]{x-1} = 2$
8. $\sqrt{x} - 3 = 0$
9. $\sqrt{x} - 2 = 0$
10. $\sqrt{x} - 5 = 0$
11. $\sqrt{x} - 1 = 3$
12. $\sqrt{x} - 2 = 2$
13. $\sqrt{x} - 4 = 3$
14. $\sqrt{x-3} - 2 = 0$
15. $\sqrt{x-1} - 3 = 0$
16. $\sqrt{x-4} - 2 = 0$
17. $\sqrt{x-3} - 1 = 0$
18. $\sqrt{x-5} - 2 = 3$
19. $\sqrt{x-1} - 3 = 4$
20. $\sqrt{x-6} - 2 = 5$
21. $\sqrt{5-x} = 4$
22. $3\sqrt{x} = 1$
23. $\sqrt{2x} = \sqrt{5}$
24. $\sqrt{4x} - 8 = 0$
25. $2\sqrt{x} - 6 = 0$