

Solve each equation. Be sure to check for extraneous solutions.

1.  $1 + x\sqrt{2} = 0$

2.  $6 + 2x\sqrt{3} = 0$

3.  $x\sqrt{2} + 3x = 4$

4.  $x - x\sqrt{5} = 2$

5.  $\sqrt{x-4} - 3 = 0$

6.  $\sqrt{x-5} - 7 = 0$

7.  $\sqrt[3]{x+1} = 2$

8.  $\sqrt[3]{x-1} = 3$

9.  $\sqrt[4]{3x} - 2 = 0$

10.  $\sqrt[4]{4x} = 3$

11.  $\sqrt{2x+3} - 7 = 0$

12.  $\sqrt{3x-5} - 3 = 1$

$$13. \sqrt{4x+8} + 9 = 11$$

$$14. \sqrt{1+2x} - 6 = -3$$

$$15. \sqrt{5x+1} + 6 = 10$$

$$16. \sqrt[4]{2x+3} + 5 = 4$$

$$17. \sqrt{3x+1} - 2 = 6$$

$$18. \sqrt[3]{x+5} + 6 = 4$$

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**Answers:**

- 1)  $-\frac{\sqrt{2}}{2}$    2)  $-\sqrt{3}$    3)  $\frac{12-4\sqrt{2}}{7}$    4)  $\frac{-1-\sqrt{5}}{2}$    5) 13   6) 54   7) 7   8) 28  
9)  $\frac{16}{3}$    10)  $\frac{81}{4}$    11) 23   12) 7   13) -1   14) 4   15) 3   16)  $\emptyset$    17) 21   18) -13