Now you try this one.

Solve.

$$(x + 7)^{\frac{2}{3}} + 2 = 18$$

$$(x + 7)^{\frac{2}{3}} + 2 = (16)^{\frac{3}{2}} = (16)^{\frac{3}{2}} = (\pm 4)^{\frac{3}{2}}$$

$$(x + 7)^{\frac{2}{3}} + 2 = 18$$

$$(x + 7)^{\frac{2}{3}} + 2 = 1$$

What is different about this one? There is an x outside of the radical.

$$\sqrt{3x-5} + 1 = x$$

$$-1 - 1$$

$$(\sqrt{3x-5})^2 = (x-1)^2$$

$$3x-5 = x^2 - 2x + 1$$

$$-2 + 6 = (x-2)(x-3)$$

$$x = 2,3$$

Solve.

$$(\sqrt{x^2 + 5})^2 = (\sqrt{x + 11})^2$$

$$\times^2 + 5 = \times + (1)$$

$$\times^2 - \times -6 = 0$$

$$\times^2 - \times -6 = 0$$

$$\times^2 \times -3 \times (x + 2) = 0$$

Solve.

$$\sqrt{3x+13} - 5 = x
+5 +5
(-\sqrt{3x+13})^2 = (x+5)^2
3x+13 = x^2 + 10x + 25
-3x -13
0 = x^2 +7x +12
+4 +3 0 = (x+3)(x+4)
x = -3, -4$$

Solve.
$$\sqrt{24-4x}+3=x$$

$$-3-3$$

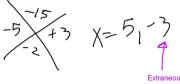
$$(\sqrt{24-4x})^2=(\chi-3)^2$$

$$24-4x=\chi^2-(\chi+9)$$

$$=\chi^2-2\chi-(5=(\chi-5)(\chi+3))$$

The last step in any solving process is to:

CHECK YOUR ANSWERS!



Solve.

$$(2x-1)^{\frac{3}{4}} - 10 = 17$$

$$+ 10 + 10$$

$$(2x-1)^{\frac{3}{4}} + \frac{10}{4} = (27)^{\frac{4}{3}} \longrightarrow (3\sqrt{27})^{\frac{4}{3}}$$

$$2x-1 = 81 \longrightarrow (3)^{\frac{4}{3}} = 8$$

$$2x - 82 \longrightarrow (4-4)$$

Solve.

$$\sqrt{5x + 10} - 2 = x$$

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

$$5x + 10 = x^{2} + 4x + 4$$

$$-5x - 10$$

$$0 = x^{2} - x - 6$$

$$0 = (x - 3)(x + 2)$$

$$X = 3^{1-2}$$

Do you think that there could be extraneous solutions for this equation?

$$\left(\sqrt[3]{x^2 - 7}\right)^2 = \left(\sqrt[3]{x - 1}\right)^2$$

No. since this is an odd radical you can get both a positive and negative number out of that, unlike even radicals which only leads to positive values.

$$x^{2}-7 = x-1$$

$$x^{2}-x-6 = 0$$

$$x^{3}(x+2) = 0$$

$$x = 3, -2$$