

## Radical Equations

Ex.  $5\sqrt{x-4} + 3 = 28$

$$\frac{5\sqrt{x-4}}{5} = \frac{25}{5}$$

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

$$(\sqrt{x-4})^2 = (5)^2$$

$$\begin{array}{r} x-4 = 25 \\ +4 \quad +4 \end{array}$$

$$\boxed{x = 29}$$

\*  $4x - 2 = 14$  \*

Reverse order  
of operations.

Ex.  $\sqrt[3]{x+3} = \sqrt[3]{2x-5}$

$$(\sqrt[3]{x+3})^3 = (\sqrt[3]{2x-5})^3$$

$$\begin{array}{r} x+3 = 2x-5 \\ -x \quad -x \end{array}$$

$$\begin{array}{r} 3 = x-5 \\ +5 \quad +5 \end{array}$$

$$\boxed{8 = x}$$

Ex.  $2x = (4x+8)^{1/2}$

$$(2x)^2 = [(4x+8)^{1/2}]^2$$

$$4x^2 = 4x + 8$$

$$4x^2 - 4x - 8 = 0$$

$$4(x^2 - x - 2) = 0$$

$$4(x-2)(x+1) = 0$$

$$\boxed{x = 2, -1}$$

Ex.  $4(2x+11)^{1/3} = 12$

What do I do first?

$$(2x+11)^{1/3} = 3$$

$$2x+11 = 3^3$$

$$2x+11 = 27$$

$$2x = 16$$

$$\boxed{x = 8}$$

Assignment: pg 632 # 2-22