## Chapter 6.6: Solve Radical Equations

## Remember these three steps...

- 1. Isolate the radical
- 2. Raise both sides to the correct power.
- 3. Solve the polynomial and check solutions.

ex. Solve: 
$$\sqrt[3]{2x+7} = \sqrt[3]{3}$$

$$2x + 7 = 27$$

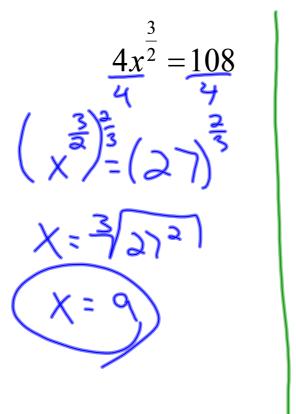
$$\frac{2x-20}{2}$$
 $\frac{2}{2}$ 
 $\frac{2}{3}$ 
 $\frac{2}{3}$ 

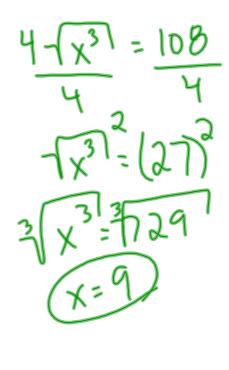
ex. In a hurricane, the mean sustained wind velocity v(in mps) is given by  $v(p) = 6.3\sqrt{1013-p}$  where p is the air pressure(in mb) at the center of the hurricane. Estimate the air pressure at the center of a hurricane when the mean sustained wind velocity is 54.5 meters per second.

54.5 = 6.3-1013-P1 6.65 = -1013-P1

$$74.84 = 1013 - P$$
 $-1013 - 1013$ 
 $-938.16 = -P$ 
 $938.16 \approx P$ 

## ex. What is the solution to:





ex. Solve: 
$$(x+2)^{\frac{3}{4}} - 1 = 7$$

$$((x+2)^{\frac{3}{4}})^{\frac{4}{5}} = (8)^{\frac{3}{5}} \rightarrow 8 \land (4/3)$$

$$(x+2)^{\frac{3}{4}})^{\frac{4}{5}} = (8)^{\frac{3}{5}} \rightarrow 8 \land (4/3)$$

$$(x+2)^{\frac{3}{4}})^{\frac{4}{5}} = (8)^{\frac{3}{5}} \rightarrow 8 \land (4/3)$$

$$(x+2)^{\frac{3}{4}} = (8)^{\frac{3}{5}} \rightarrow 8 \land (4/3)$$

ex. Solve: 
$$(x+1)^{2} = \sqrt{7x+15}^{2}$$
  
 $(x+1)(x+1) = 7x+15$   
 $x^{2} + 2x+1 = 7x+15$   
 $x^{2} - 7x-15 = 7x-15$   
 $x^{2} - 5x - 14 = 0$   
 $(x-7)(x+2) = 0$ 

Two Radicals????? Now what?

Method 1:

Method 2:

$$X+3+2|x|=3-x$$
 $X+3+2|x|=3-x$ 
 $X=3-x$ 
 $X=3-$ 

Homework: Ch 6.6 pg.456 #'s 4-30eoe,34-50eoe,58