

Adding and Subtracting Radicals

How hard can adding be?

You just have to remember that you can't take the square root of a negative number! Not yet...

State the restriction:

$$\sqrt{4-x}$$
 $\sqrt{2-3x}$)

 $\sqrt{4-x}$ $\sqrt{2}$ $\sqrt{2}$

Solve:

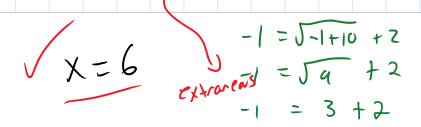
$$\sqrt{x+1} + 3 = 5$$

Here are the steps you want to follow every time you have a radical in your expression:

- 1. Isolate the radical
 - > Get the root alone on one side of the equation
- 2. Square both sides
 - ➤ This gets rid of the radical. Back to easy mode after this!
- 3. Solve for x
- (4) Check for extraneous roots
 - Sometimes you may find answers that are not allowed. Non Permissible Values (NPV)

Non Permissible Values (NPV)

$$|x+1| + 3 = 5$$
 $|x+1| = 5-3$
 $|x+1| = 4$
 $|x+1|$



When you square both sides of an equation, you are destroying information about the signs of the two sides. Now we have a new equation. Both answers may work in that equation, but we need to check our original equation to see that it works in there too!

$$x - \sqrt{x+2} = 0$$

Quiz next class.

HW: pg: 300 #1,3-6,7ab,8,12