**Solving Equations with Radicals…this is gonna be radical!!!!!!!!!!**

First of all, remember that the opposite of a square root (√) is a square (²), the opposite of a cube root (³√) is a cube (³), the opposite of a fourth root (⁴√) is raising something to the fourth power (⁴), and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on and on…

Ok, on to the good stuff…

Step 1) Isolate the radical. If you have $\sqrt{x+4}$ + 3 = 3, then the first thing you will do is to subtract 3 from both sides. This will give you $\sqrt{x+4}$ = 0.

Step 2) Get rid of the radical. If it’s a square root, then square it, if it’s a cube root, then cube it, etc. (Just remember that what you do to one side, you have to do the same to the other…and on that note, also remember that if you square a binomial, then you foil!!!)

 So from the example above, you would square both $\sqrt{x+4}$ and 0. This would give you x + 4 and 0, respectfully.

 If you square the right side…

 If it’s a +/- b, then foil

 If it’s a x b, then distribute the exponent

Step 3) Combine like terms on one side (setting one side =0)

Now, if there is only one variable left, then solve for it by isolating the variable. If there is more than one variable (like an x² and an x), then you have to factor and then use the Zero Product Property to get your answers (if this makes no sense, then see the problems we did in class).

Step 4) Solve!

If you have an x squared and an x, then you have to factor. If you only have an x or a p or whatever, then just solve.

 If you have to factor…then after you factor, set all of your factors = 0 and solve.

Side note: If you are dealing with two radicals, then you choose either one to isolate first and then get rid of the radical sign…then isolate the other one and then get rid of that radical sign…then you can pick up with Step 3)! The steps will always work!