Steps For Radical Equations

1. W.O.P.
2. Isolate one radical on one side of the equation by adding or subtracting terms on each side and dividing each side by number in front of radical.
3. If there is more than one radical in the equation, get one radical on one side and the other radical on the right side.
4. Put each side in a ( ) and raise it to the power that is the same as the index of the radical. For example, a radical with an index of 3 like $\sqrt[3]{x-2}$ is raised to the 3rd power.
5. Simplify each side. The side with the one radical in a ( ) will end up with just the radicand because squaring a square root or cubing a cube root are inverse operations of each other. When simplifying, make sure you expand a ( ) when there are two or more terms, for example $\left(\sqrt{x}+2\right)^2$ becomes, $\left(\sqrt{x}+2\right)\left(\sqrt{x}+2\right)$.
6. If a radical still remains, follow steps 2 through 5.
7. You will now end up with an equation with variable terms and constants and no radicals. This equation cab solved by earlier techniques.
8. The check is so critical here because some of the answers will not check.

Example: Solve $\sqrt[3]{4-3y}+2=1$

Notes on Solving:	Solve
Write out problem.	$\sqrt[3]{4-3y}+2=1$
Subtract 2 from each side and simplify to isolate the radical on the left side.	$\sqrt[3]{4-3y}+2-2=1-2$
The radical is now isolated and each side is simplified	$\sqrt[3]{4-3y}=-1$
We now put each side in ( ) and raise each ( ) to the 3rd power.	$\left(\sqrt[3]{4-3y}\right)^3=(-1)^3$
Equation is now clear of radicals; solve as usual.	$4-3y=-1$ $4-4-3y=-1-4$ $-3y=-5$ $\frac{-3y}{-3}=\frac{-5}{-3}$ $y=\frac{5}{3}$

Check $\sqrt[3]{4-3y}+2=1$ for $y=\frac{5}{3}$.

$\sqrt[3]{4-3\left(\frac{5}{3}\right)}+2 \stackrel{?}{=} 1$

$\sqrt[3]{4-5}+2 \stackrel{?}{=} 1$

$\sqrt[3]{-1}+2 \stackrel{?}{=} 1$

$-1+2 \stackrel{?}{=} 1$

$1=1$ true

The solution set is $\left\{\frac{5}{3}\right\}$.