Review of Radical Equations:

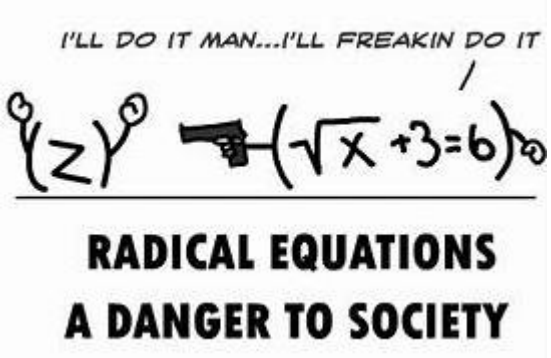
1. Isolate a radical on one side of the equation.

2. Raise both sides to a power that eliminates the isolated radical.

3. Repeat steps 1 and 2, if needed.

4. Solve the new radical-free equation.

5. Check your solution(s) in the original equation.



Examples:

1. $\sqrt{5x+2}=7$

2. $\sqrt{3x}-4=6$

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

4. $\sqrt{x-3}=-4$

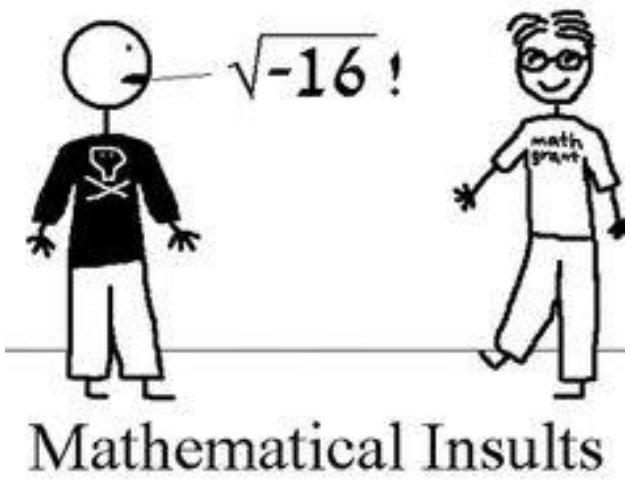
5. $x-5=\sqrt{x+7}$

6. $\sqrt{2x+7}-2=x$

7. $\sqrt{5x-3}=\sqrt{2x+3}$

8. $\sqrt{x-9}+\sqrt{x}=1$

9. $\sqrt{4x-3}=2+\sqrt{2x-5}$



Write a single radical expression.

$$\frac{\sqrt[4]{x-3}}{\sqrt{x-3}}$$

"That's totally gnarly, dude!"

Quadratic-like radical equations:

1. $x^{\frac{2}{3}} + x^{\frac{1}{3}} - 6 = 0$

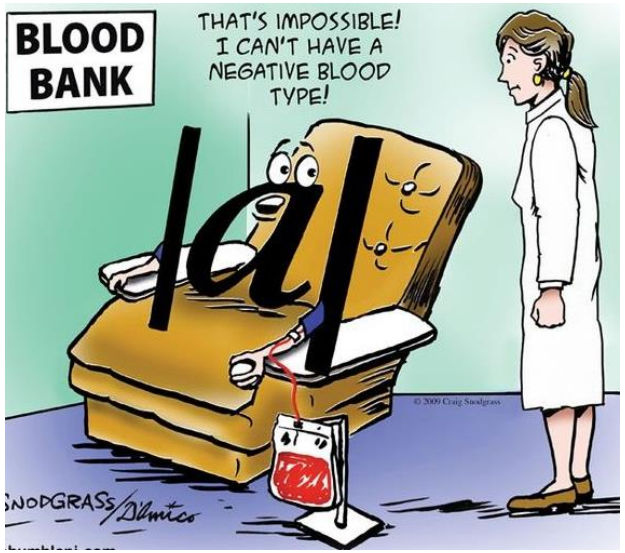
$$\left(x^{\frac{1}{3}}\right)^2 + x^{\frac{1}{3}} - 6 = 0 \text{ or } \left(\sqrt[3]{x}\right)^2 + \sqrt[3]{x} - 6 = 0$$

2. $x^{\frac{1}{2}} - 4x^{\frac{1}{4}} + 3 = 0$

$$\left(x^{\frac{1}{4}}\right)^2 - 4x^{\frac{1}{4}} + 3 = 0 \text{ or } \left(\sqrt[4]{x}\right)^2 - 4\sqrt[4]{x} + 3 = 0$$

Absolute Value Equations:

The absolute value of a number is its distance from zero on the number line.



1. For $a > 0$**,**

$|something| = a$ **means that** $something = \pm a$**.**

2. For $a < 0$**,**

$|something| = a$ **means that the equation has no solution.**

3. $|something| = 0$ **means that** $something = 0$**.**

Solve the absolute value equation.

$|7x + 2| = -3$

NO SOLUTION!

Examples:

1. $|x| = 5$

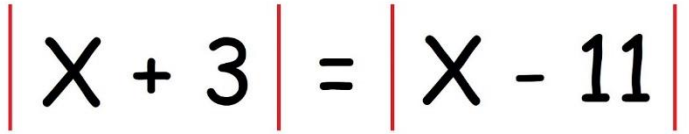
2. $|x| = -9$

3. $|3x - 2| = 7$

4. $|x| - 2 = 6$

5. $|6x| + 8 = 32$

Absolute Value Equations



Plenty of Example Problems!

6. $\left|\frac{4-5x}{6}\right|=7$

7. $2|2x-7|+11=25$

8. $|x-6|=-8$

9. $|2x-8|=|x+3|$ **{If** $|a|=|b|$**, then either** $a=b$ **or** $a=-b$**.}**

10. $|x-15|=|x+8|$