A Trick to Solve Big, Ugly Equations

1. Turn on your calculator.
2. Press Y=
3. Type the left side of the equation into Y1
4. Type the right side of the equation into Y2
5. Press GRAPH
6. Find where the graphs cross. (You may be able to TRACE to do this or you might have to do 2nd > CALC > INTERSECT)
7. The answers are the x-coordinate of each intersection. (Yes, there may be more than one.)

2

$$\frac{6}{x-3} = x+2$$

Y1= *Y2=*

A) How many places do the graphs intersect?

B) What are the solutions of the equation?

Sketch what you see on the screen, including axes.

Example

$$x^2+3x-5=4x+7$$

Y1= x^2+3x-5 *Y2=* $4x+7$

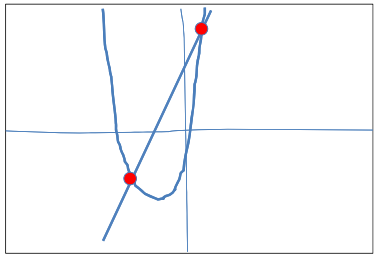
A) How many places do the graphs intersect?

2

B) What are the solutions of the equation?

4 and -3

because the graphs cross at (4, 23) and (-3, -5) and only the x-coordinates matter (since the original problem didn't have any y's)



Sketch what you see on the screen, including axes.

1

$$\sqrt[3]{x} + 4 = x + 4$$

Y1= *Y2=*

A) How many places do the graphs intersect?

B) What are the solutions of the equation?

Sketch what you see on the screen, including axes.

3

$$\frac{4x+2}{x} = -x+3$$

Y1= *Y2=*

A) How many places do the graphs intersect?

B) What are the solutions of the equation?

Sketch what you see on the screen, including axes.

4

$$20(3^x) = 450$$

Y1= *Y2=*

A) How many places do the graphs intersect?

B) What are the solutions of the equation?

Sketch what you see on the screen, including axes.

5

$$\frac{1}{\sqrt{x-2}} = \sqrt{x+4}$$

Y1= *Y2=*

A) How many places do the graphs intersect?

B) What are the solutions of the equation?

Sketch what you see on the screen, including axes.

6

$$\log(7x) = 4.5$$

Y1= *Y2=*

A) How many places do the graphs intersect?

B) What are the solutions of the equation?

Sketch what you see on the screen, including axes.