Lesson 27: Solving Equations on your Calculator

By the end of the lesson, you will be able to:

~Solve equations on your calculator

Example 1: Solve for x. (by hand)

$$2x - 6 = 0$$

+6 +6

$$\frac{2x}{2} = \frac{6}{2}$$

$$\boxed{x = 3}$$

Example 2: Solve for x. (by graphing – find x-int and y-int.)

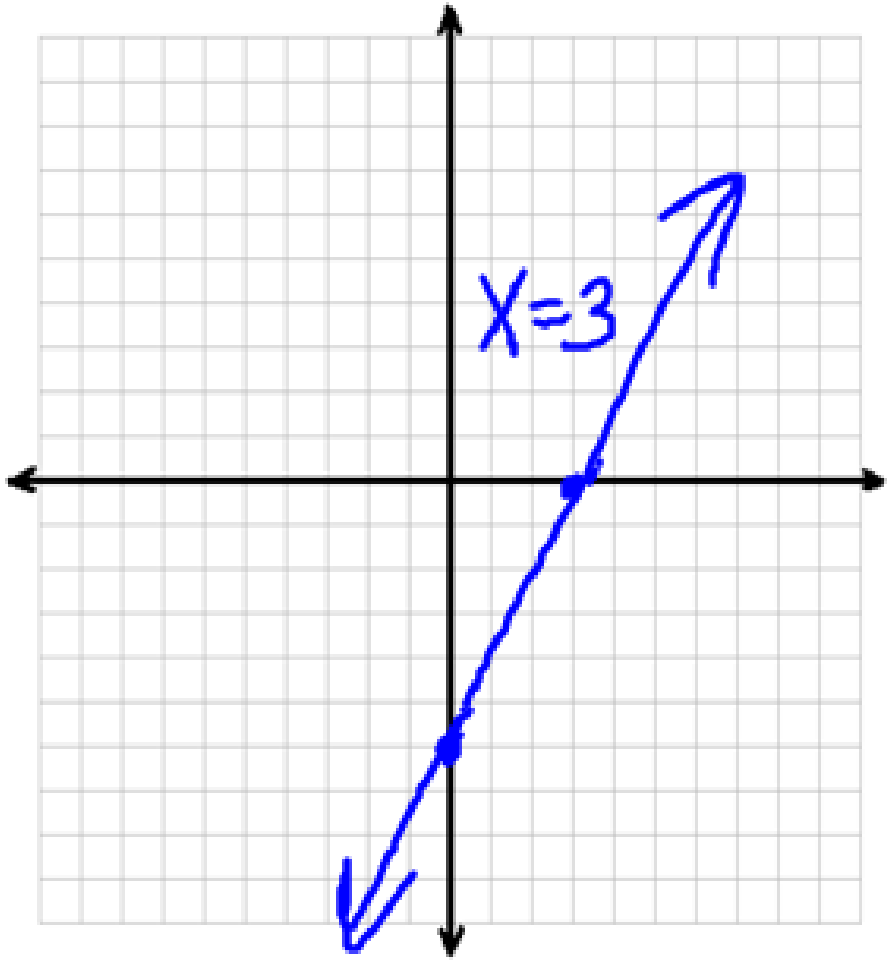
$$y = 2x - 6$$

X-int: (3, 0)

$0 = 2x - 6$

$x = 3$

y-int: (0, −6)



We can solve for x on our calculator. Here's how:

↗ x= ↗ x=

"Solve on Your Calculator" or "Finding Zeros":

Get out your TI-84. Turn it on and:

1. Press the "Y=" button. ex: $y = 2x - 6$
2. Clear out anything that is the Y= spot.
3. Enter your equation.
4. Press "Graph".
5. Now push "2nd" "Trace". (This is the Calculate screen.)

"Solve on Your Calculator" or "Finding Zeros": Cont.

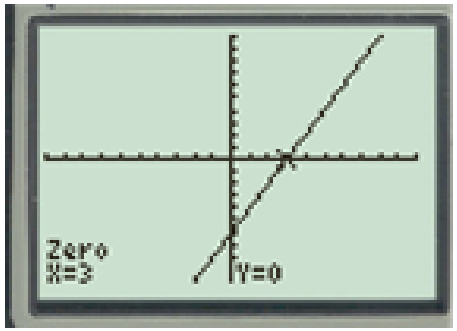
6. Go down to #2 "**Zero**". (This will find where the graph crosses the x-axis.)
7. You will need to find a *Left Bound Guess*, a *Right Bound Guess*, and a *Guess*. Press "Enter" after every guess.
8. Write you answer as "x= ____". ex: X=3
9. You may need to repeat steps 5-8 if there is more than one spot the graph crosses the x-axis.

Example 3: Solve for x. (On Calc). Remember - first write the equation set equal to zero. (That is the only way to solve for x.)

$$y = 2x - 6$$

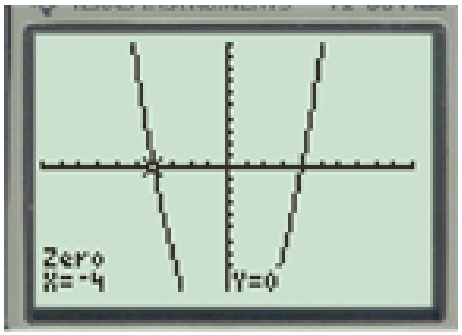
$0 = 2x - 6$

$X = 3$



Example 4: Solve for x. (On Calc).

$$x^2 - 16 = 0$$



X = -4

X = 4

do again

Example 5: Find the Zeros. (On Calc).

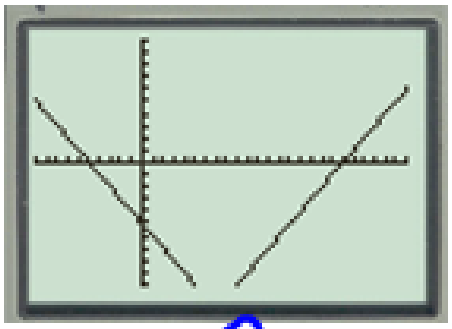
Remember - first write the equation set equal to zero.

$$|x - 7| = 12$$

$|X-7|-12=0$

$X=-5$

$X=19$



Change window to see both X-int.

Absolute Values:

Get out your TI-84. Turn it on and:

1. Press the "Y=" button.
2. Clear out anything that is the Y= spot.
3. Push "Math", then arrow over to "NUM". The first option is "abs(". Press enter.
4. You now have "Y1=abs(". Enter an "x" and close the parenthesis.
5. Press the "Graph" button. You should now have a graph of $y=|x|$.

Example 6: Solve the equation. Round to 3 decimal places.

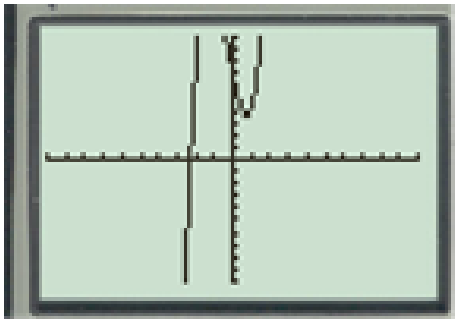
Remember – first write the equation set equal to zero.

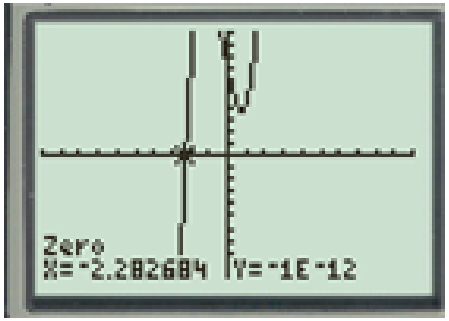
$$y = 3x^3 + 2x^2 - 8x + 7$$

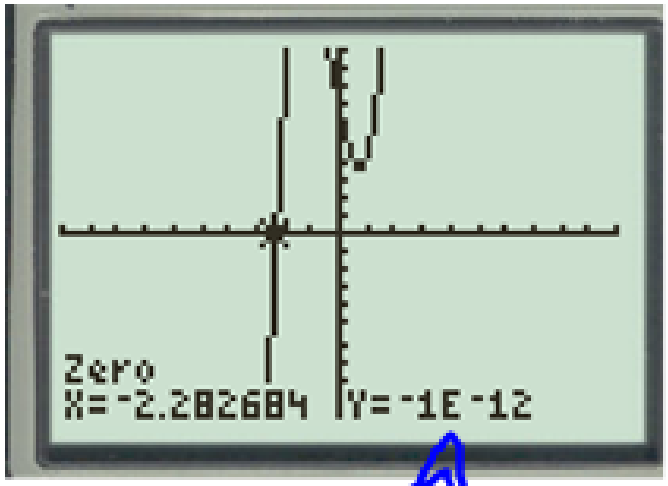
$$0 = 3x^3 + 2x^2 - 8x + 7$$

$$X = -2.282684$$

$$\boxed{X = -2.283}$$







-1×10^{-12}

$-.000000000001$

Close enough to Zero for us.

Example 7: Find the Zeros.

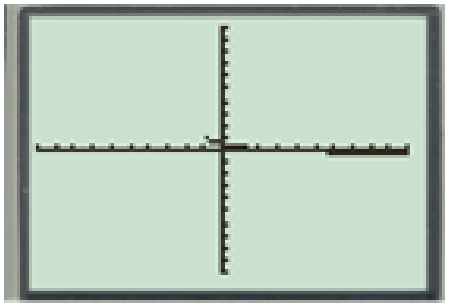
Remember - first write the equation set equal to zero.

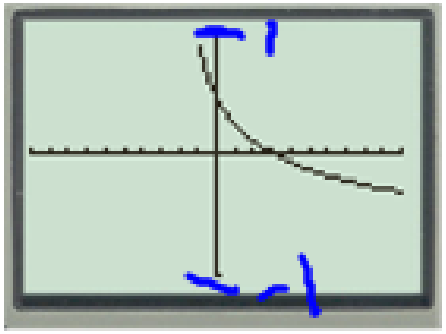
$$\sqrt{a+1} = \sqrt{a+6} - 1$$

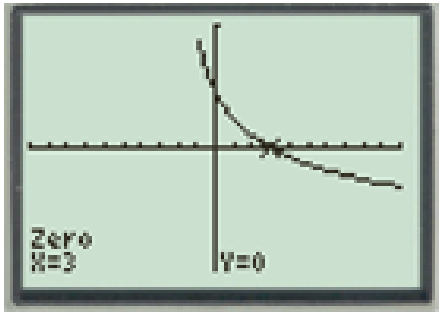
$-\sqrt{a+1}$ $-\sqrt{a+1}$

$0 = \sqrt{a+6} - 1 - \sqrt{a+1}$

$a = 3$







Lesson 27: Solving Equations on your Calculator

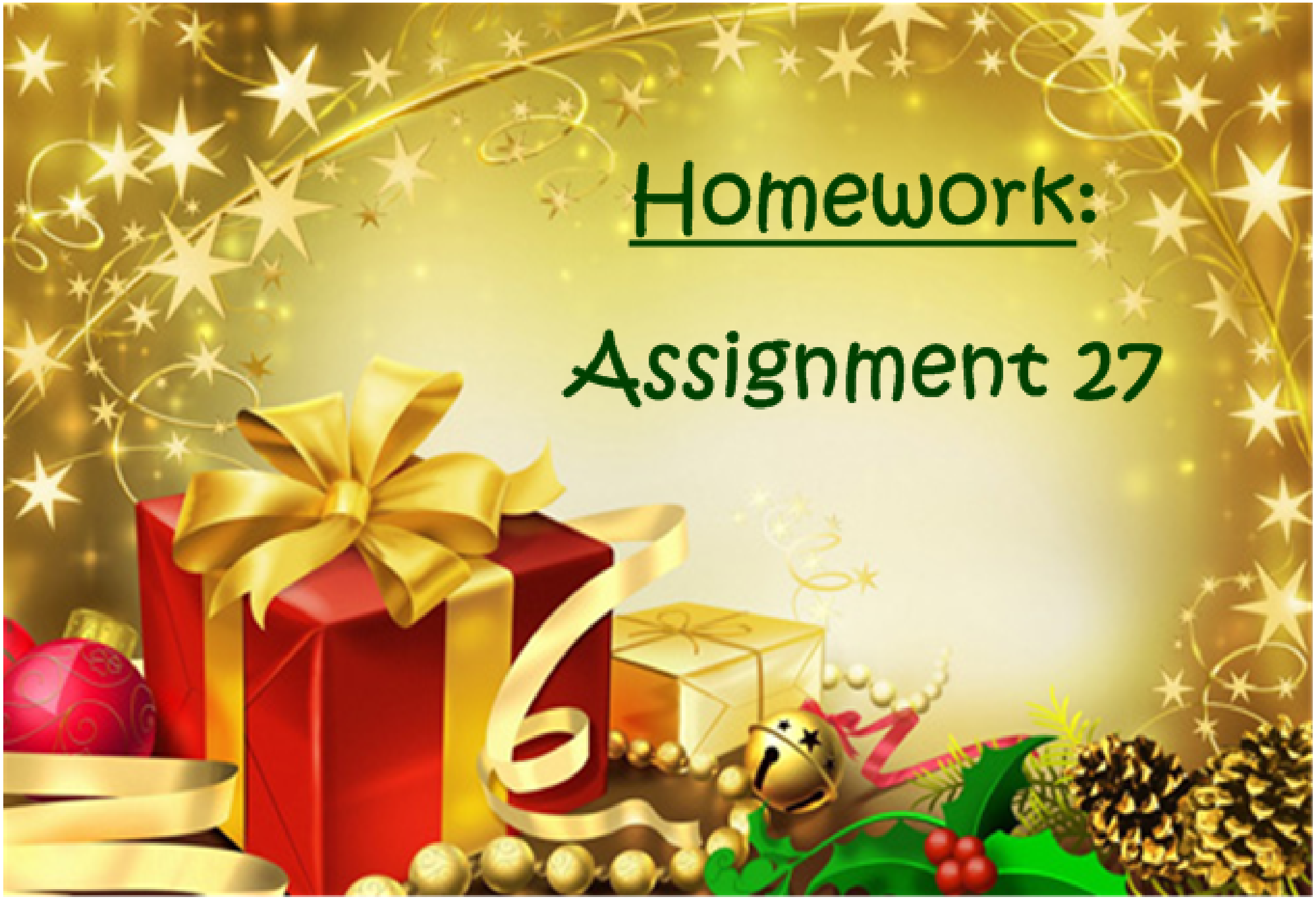
By the end of the lesson, you will be able to:

~Solve equations on your calculator

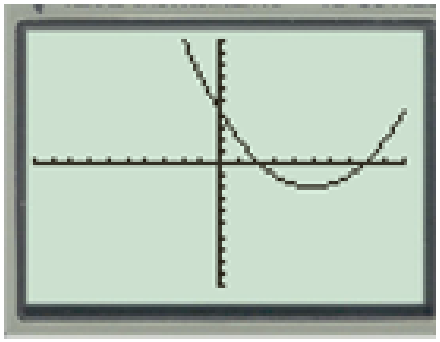
Work

Can you?

1. write down original problem
2. Set equal to zero
3. X = ___

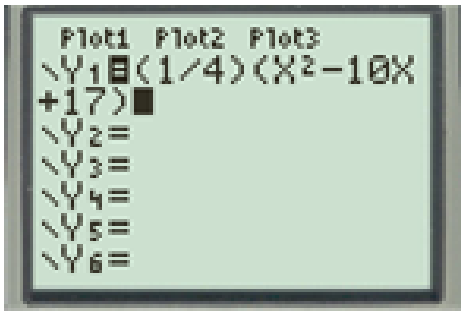

Homework:
Assignment 27

1. $\frac{1}{4}(x^2 - 10x + 17) = 0$



$x = 2.172$

$x = 7.828$



ex: $\sqrt[3]{x+2} - 3 = 0$

calc: $y = (x+2)^{(1/3)} - 3$