Name:_____ Date:_____

Lesson 16

DO NOW

Given: $f(x) = |x+2| - 3$

$g(x) = \frac{1}{2}x + 1$

a) Graph each equation.

b) When does $f(x) = g(x)$?

POI?

(-4, -1)

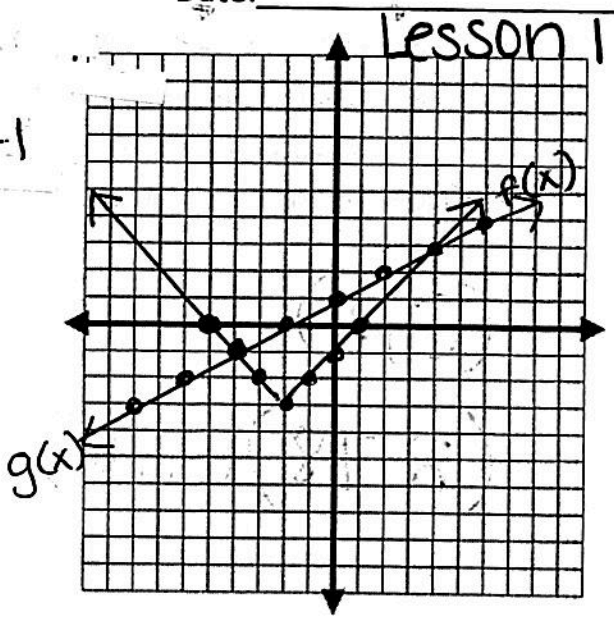
(4, 3)

f(x)	
x	y
-5	0
-4	-1
-3	-2
-2	-3
-1	-2
0	-1
1	0

$y = \frac{1}{2}x + 1$

$m = \frac{1}{2}$

$b = 1$



Aim: SOLVING FUNCTIONS GRAPHICALLY USING THE TRACE KEY ON CALC

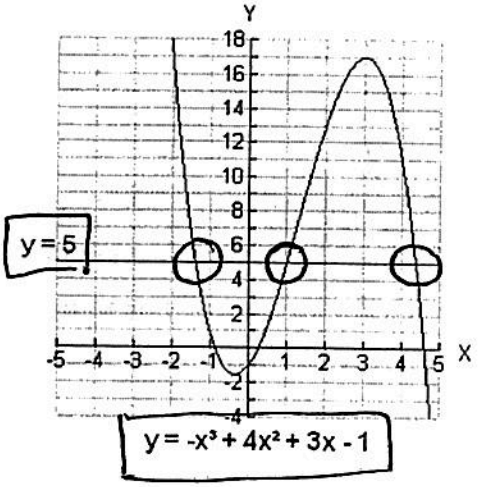
1. Given the graph below, identify the coordinates of the point or points where the graphs intersect, ***to the nearest tenth.***

(1, 5) → table

(-1.4, 5)

(4.4, 5)

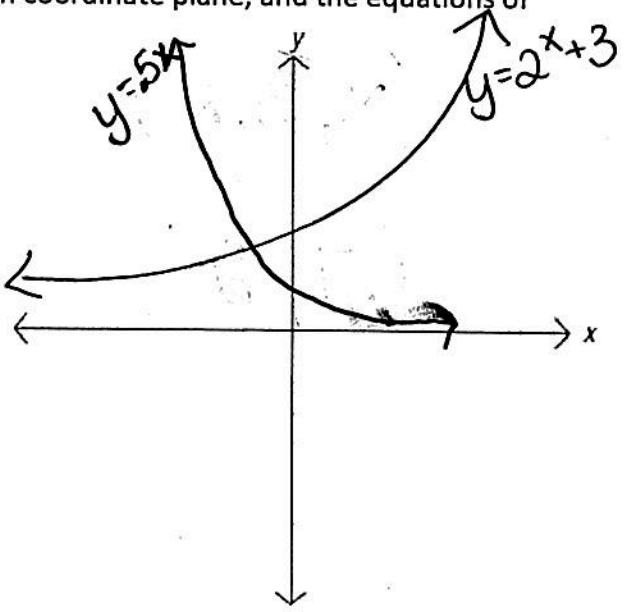
} use trace key!



2. The flight paths of two Thunderbird jets are plotted on a Cartesian coordinate plane, and the equations of the flight paths are represented by $y = 2^x + 3$ and $y = 0.5^x$

   a. Sketch the path of both Thunderbird jets.

exponential



   b. ***To the nearest hundredth,*** determine where the paths of the two Thunderbirds jets will intersect.

(-1.72, 3.30)

y_1 y_2

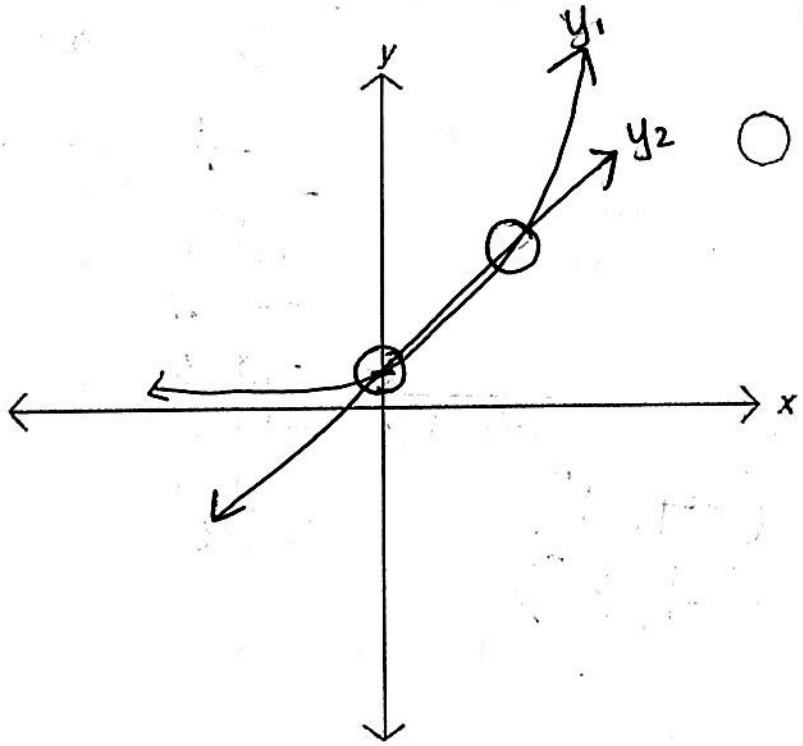
3. Given: $2(1.5)^x = 2 + 1.5x$

   a. Sketch both equations.

   b. ***To the nearest hundredth***, use the calculator to determine the solution set.

(0, 2)

(2.78, 6.16)



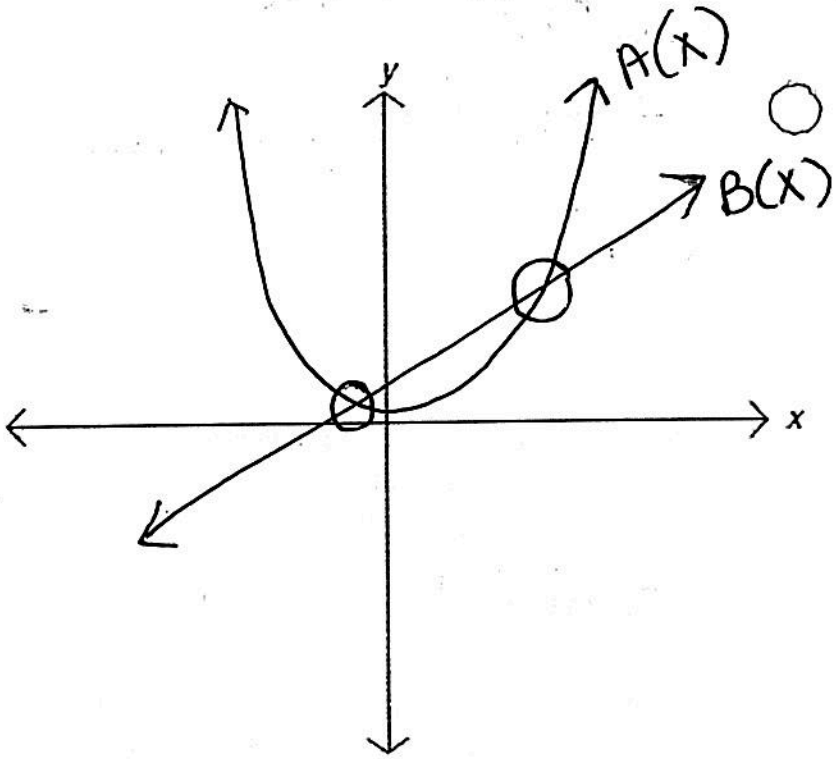
4. Given y_1 $A(x) = 0.75x^2 - 2x + 3$
   y_2 $B(x) = .75x + 1.50$

   a. Sketch both equations.

   b. ***To the nearest tenth***, use the calculator to determine the solution set.

(3, 3.8)

(.7, 2)



PARTNER PRACTICE

5. Given $h(x) = |x + 2| - 3$ and $g(x) = -|x| + 4$.

a. Describe how to obtain the graph of h from the graph of $a(x) = |x|$ using transformations.

- Left 2
- Down 3

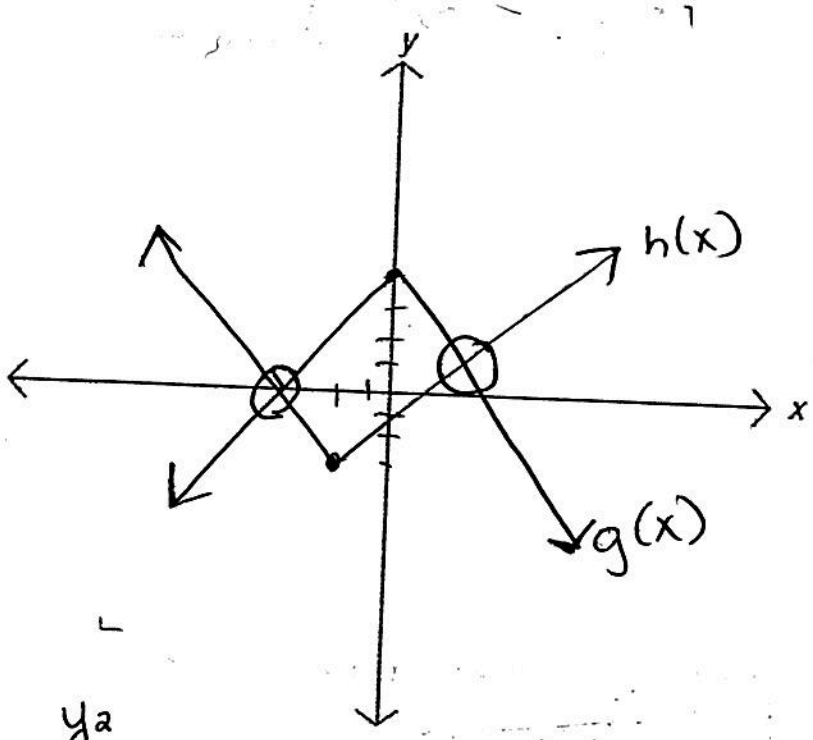
b. Describe how to obtain the graph of$g$ from the graph of $a(x) = |x|$ using transformations.

- Reflect over X-axis
- Up 4

c. ~~Plot~~ Sketch the graphs of $h(x)$ and $g(x)$ on the same coordinate plane.

x	y

x	y



d. Determine the solutions to the equation: $\underbrace{|x + 2| - 3}_{y_1} = \underbrace{-|x| + 4}_{y_2}$

P.O.I.

(-4.5, -.5) and (2.5, 1.5)