

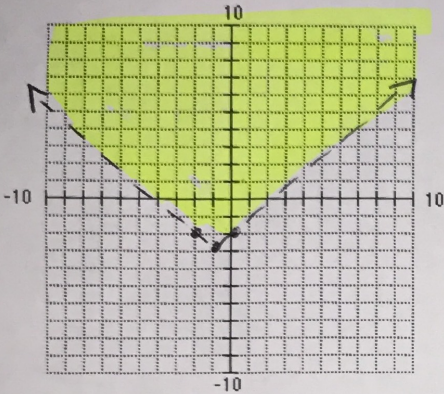
# Master E

## Day 06: Notes on Graphing Absolute Value & Linear Inequality Functions

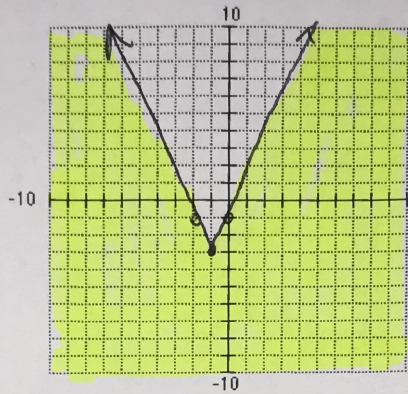
How is graphing an inequality function different from graphing a function?

☺ List as many things as you can think of!!

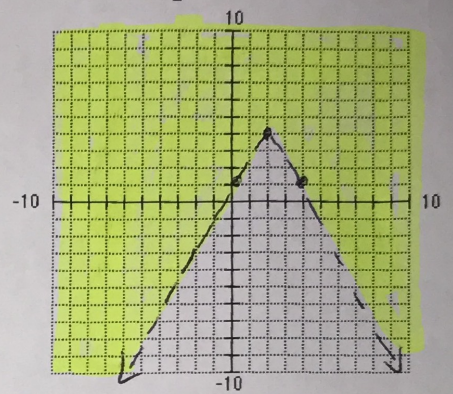
1.  $y > |x + 1| - 3$



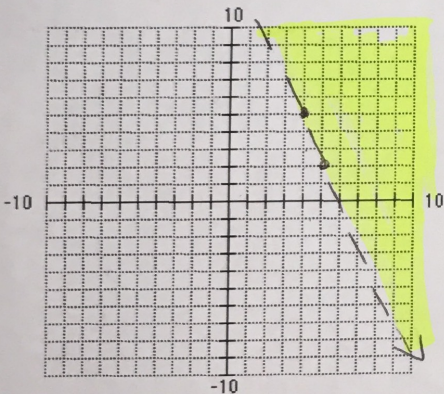
2.  $y \leq 2|x + 1| - 3$



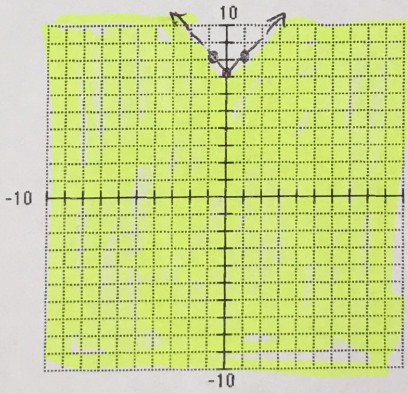
3.  $y > \frac{-3}{2}|x - 2| + 4$



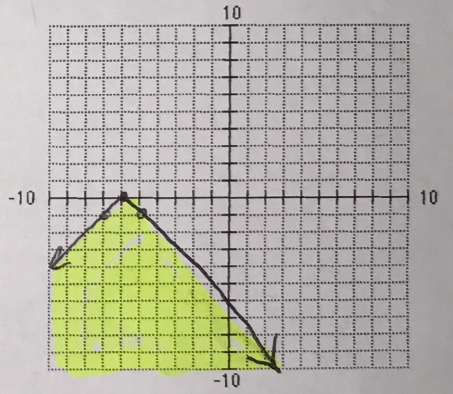
4.  $y > -3(x - 4) + 5$



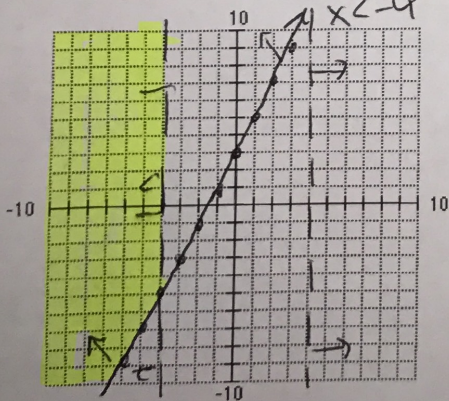
5.  $f(x) < |x| + 7$



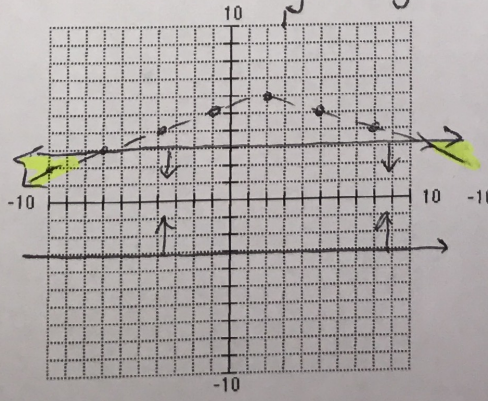
6.  $f(x) \leq -|x + 6|$



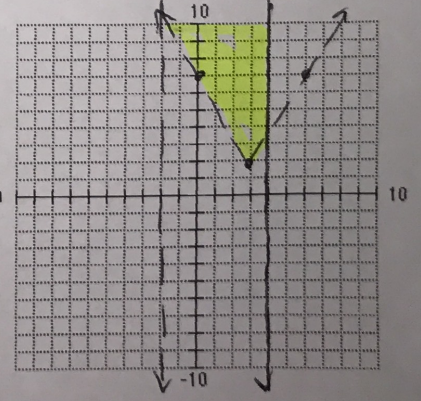
☺ 7.  $y \geq 2(x + 4) - 5$   
 $|x| > 4$  OR  $x > 4$   
 $x < -4$



☺ 8.  $y > -1/3|x - 2| + 6$   
 $|y| \leq 3$  AND  $y \leq 3$   $y \geq -3$



☺ 9.  $y > 5/3|x - 3| + 2$   
 $-2 < x \leq 4$





10. What transformations map  $f(x) = |x|$  onto  $f(x) = -\frac{3}{4}|x+3|+7$ ?

Shift left 3, up 7, reflect over the x-axis & compress w/a factor of  $\frac{3}{4}$ .

11. I am a function. My parent function is  $f(x) = |x|$ . My parent function is mapped onto me by a reflection over the line  $y = 0$ , then a horizontal shift three units to the right, a vertical shift 4 units up, and finally a vertical stretch with a factor of 2. Who am I? ☺

$$f(x) = -2|x-3|+4$$



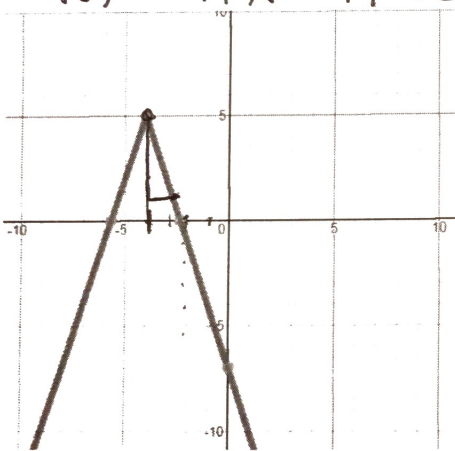
12. I am a function. My parent function is  $f(x) = x^2$ . My parent function is mapped onto me by a reflection over the line  $y = 0$ , then a horizontal shift 2 units to the left, a vertical shift 7 units down, and finally a vertical stretch with a factor of  $\frac{3}{2}$ . Who am I? ☺

$$f(x) = -\frac{3}{2}(x+2)^2 - 7$$

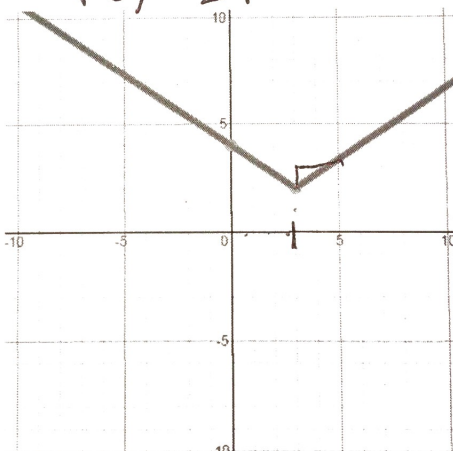


13-15: What's my function? State the equation/inequality for each function graphed.

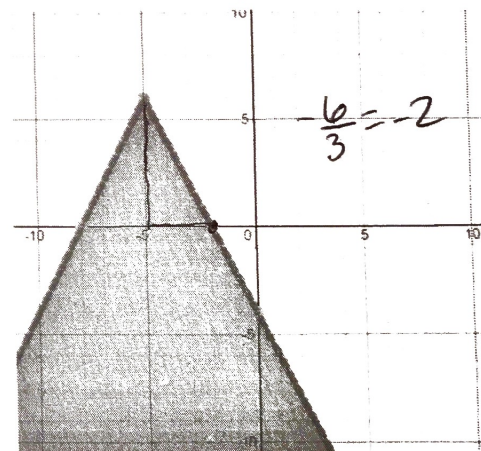
13.  $f(x) = -4|x+4|+5$



14.  $f(x) = \frac{1}{2}|x-3|+2$

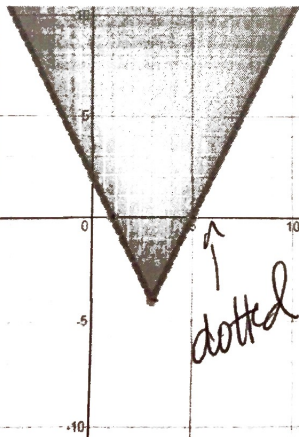


15.  $y \leq -2|x+5|+6$



16. How are A, B, C and D ALL related?

A.



B.

$$4 > 2|x-3|$$

C.

$$y > 2|x-3| - 4$$

D.

$$1 < x < 5$$

A is the graph of C  
D is the sol. to B

They are all forms of the inequality