

1. Write a linear equation that best fits the data. Predict the output (y value) if the input (x value) is 15.

1	2	3	4	5	6	7	8	9	10
68	95	126	152	187	215	250	276	309	340

2. Evaluate the following.

$$f(x) = \begin{cases} 6x - 4, & x \leq 1 \\ -4x^2 + 2, & 1 < x < 5 \\ -2x + 3, & x \geq 5 \end{cases}$$

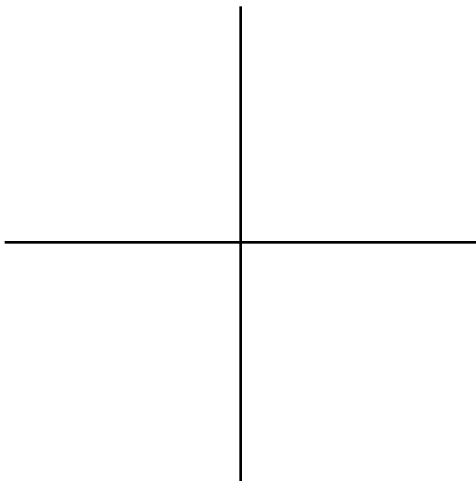
a)  $f(-4)$

b)  $f(10)$

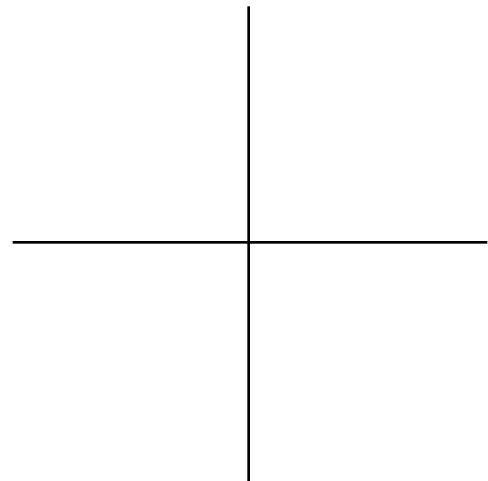
c)  $f(3)$

3. Graph the inequalities.

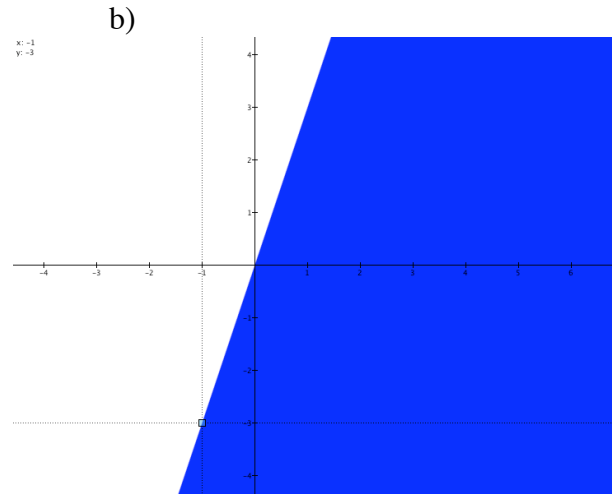
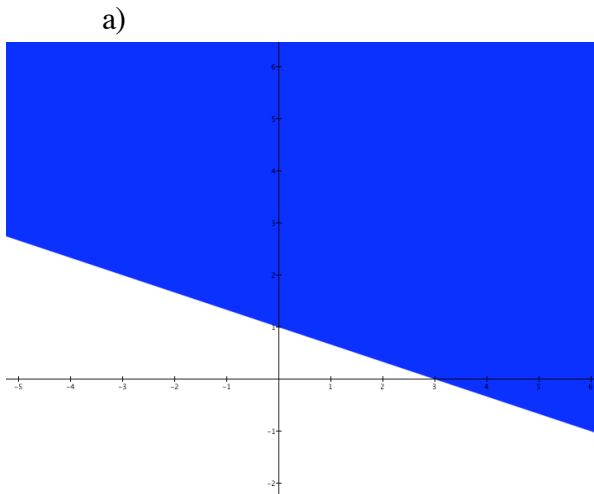
a)  $9x - \frac{3}{4}y < 6$



b)  $8x > -4y$

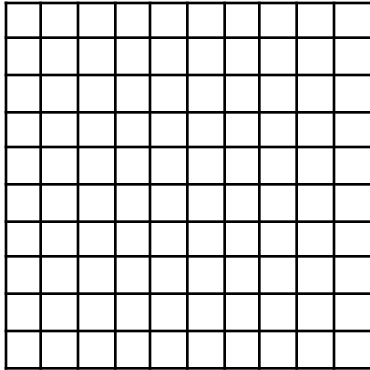


4. Write an inequality for the following. The first graph has solid line the second a dotted

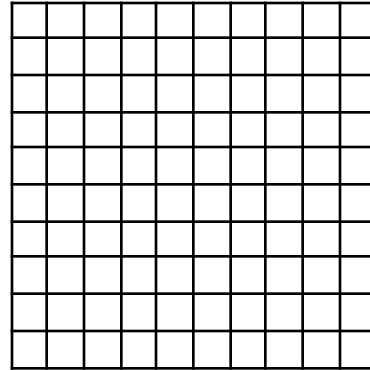


5. Graph the following piecewise functions.

a)  $f(x) = \begin{cases} x + 1, & \text{if } x < 3 \\ 2x - 2, & \text{if } x \geq 3 \end{cases}$

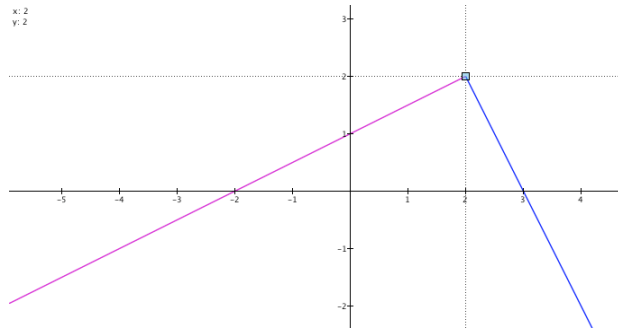


b)  $f(x) = \begin{cases} 0, & \text{if } 0 \leq x < 2 \\ 2, & \text{if } 2 \leq x < 4 \\ 3, & \text{if } 4 \leq x < 6 \\ 1, & \text{if } 6 \leq x < 8 \end{cases}$

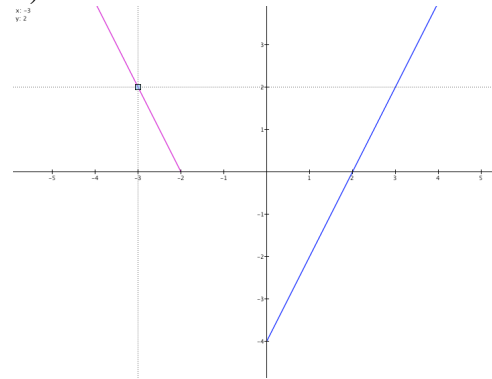


6. Write a piecewise function for the following. The left line has a solid dot and the right has an open

a)

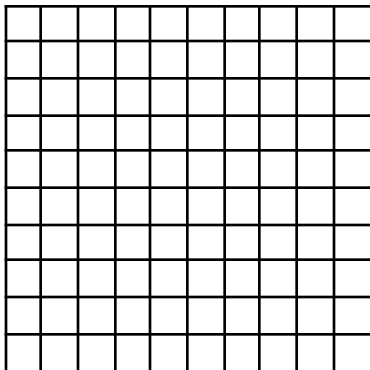


b)

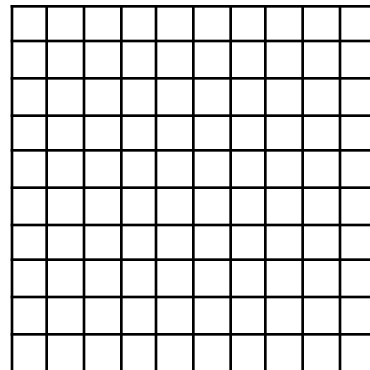


7. Graph each of the following. Label the vertex.

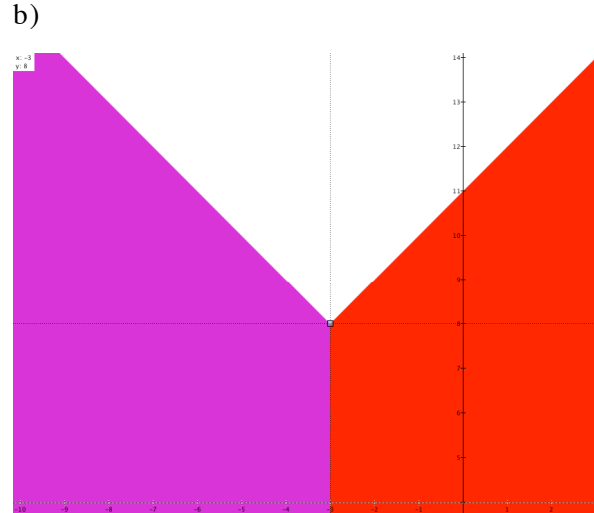
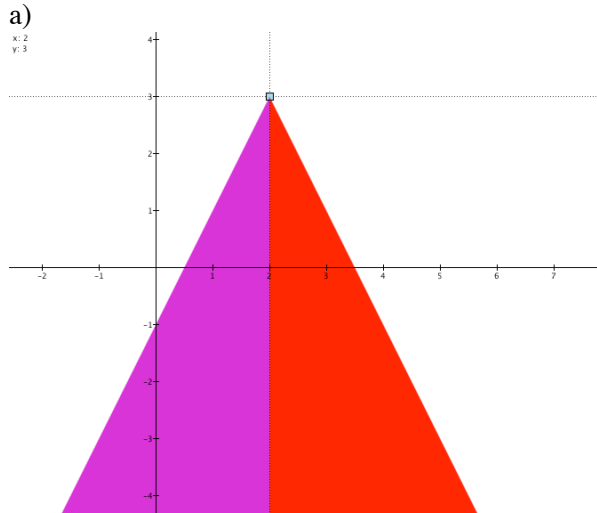
a)  $y = |x - 5| + 4$



b)  $y = 2|3x - 12| + 5$



8. Write an inequality for the following. All lines are solid



9. The population,  $P$  (in 1,000's), of a town can be modeled by  $P = 2|t - 6| + 4$ , where  $t = 0$  represents 1990. During which two years does the town have a population of 8000?

10. You are trying to make a hole-in-one at the miniature golf national championships. Imagine a coordinate plane is over the putting green. Your ball is at  $(2.5, 2)$  and you bank the ball off the wall at  $(6, 8)$ .

a) Write an equation to represent the path of the ball.

b) The hole is at  $(9.5, 2)$ , did the ball go in the hole?