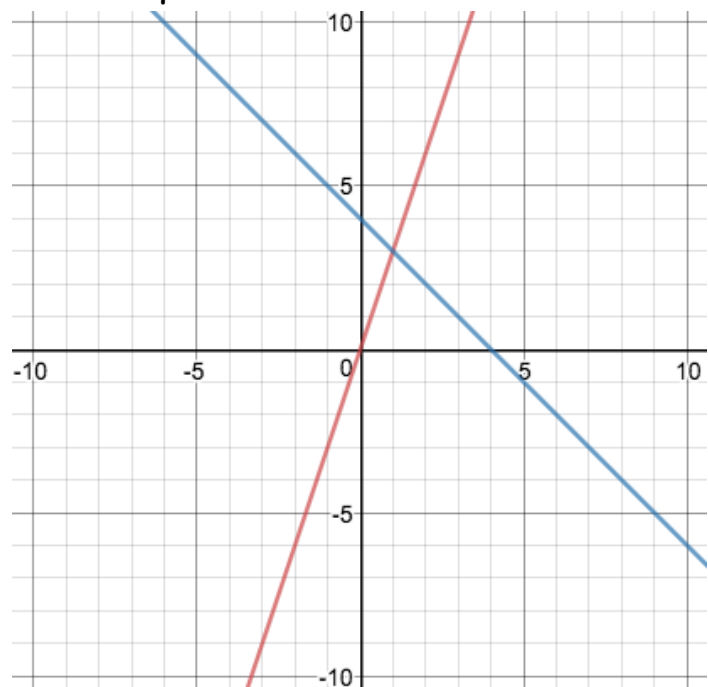


Do-Now:

Sam graphed the following system of equations.

a) What is the solution to her system?



b) How do you know that is the solution?

Comparing Functions

$$f(x) = x^2$$

$$g(x) = 2x + 3$$

Evaluate both when:

$$x = -2$$

$$f(x) = (-2)^2$$

(4)

$$g(x) = 2(-2) + 3$$

-4 + 3
(-1)

$$x = 0$$

$$f(x) = (0)^2$$

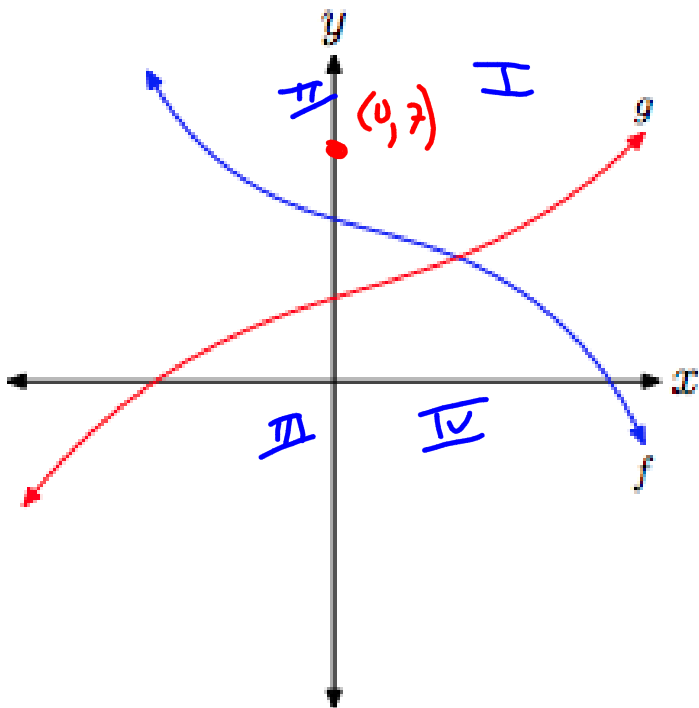
(0)

$$g(x) = 2(0) + 3$$

= (3)

$$x = 3$$

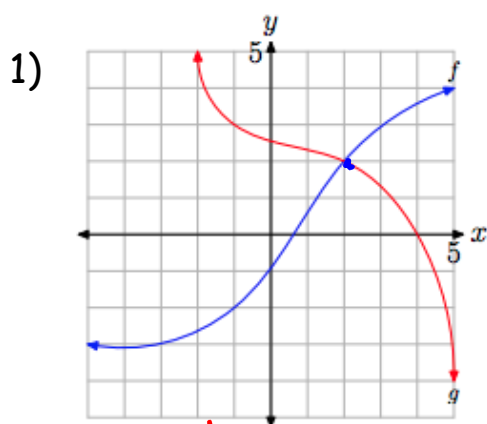
On a Graph



What
could be
the
solution
point

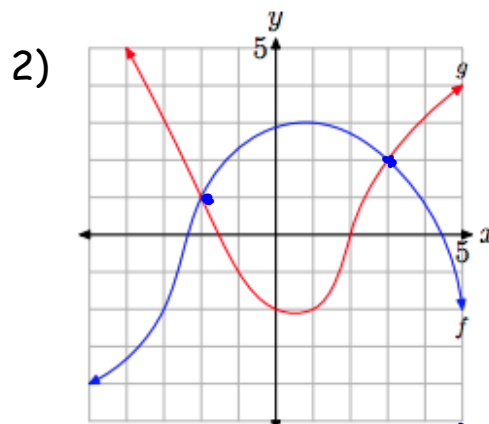
- a) $(1, 1)$ c) $(14, 2)$
b) $(1, 11)$ d) $(5, 3)$

For what values of x does $f(x) = g(x)$?



$$X = (2, 2)$$

$$x = 2$$



$$(-2, 1)$$

$$x = -2$$

$$(3, 2)$$

$$x = 3$$

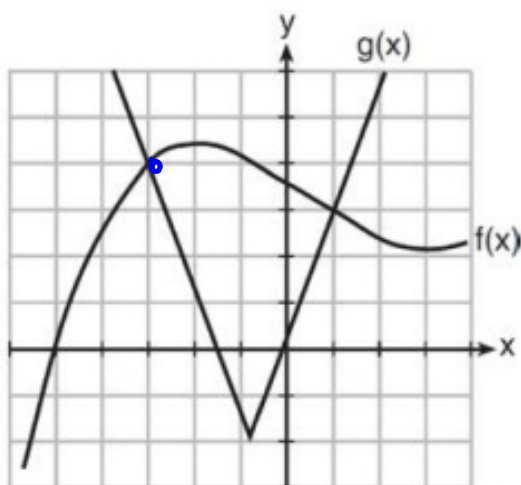
For what values of x is $f(x) > g(x)$?

Regents Alert

State all values of x where $f(x) = g(x)$

$$x = 1$$

$$x = 3$$

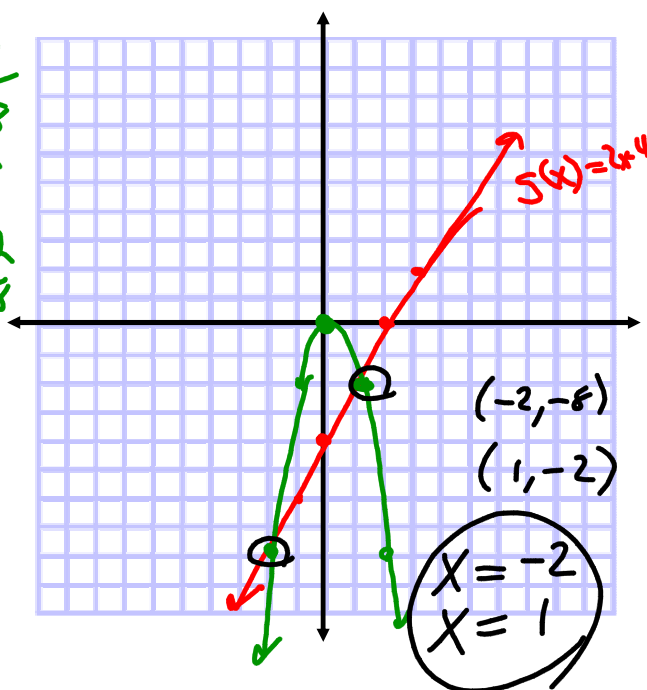


Let $f(x) = -2x^2$

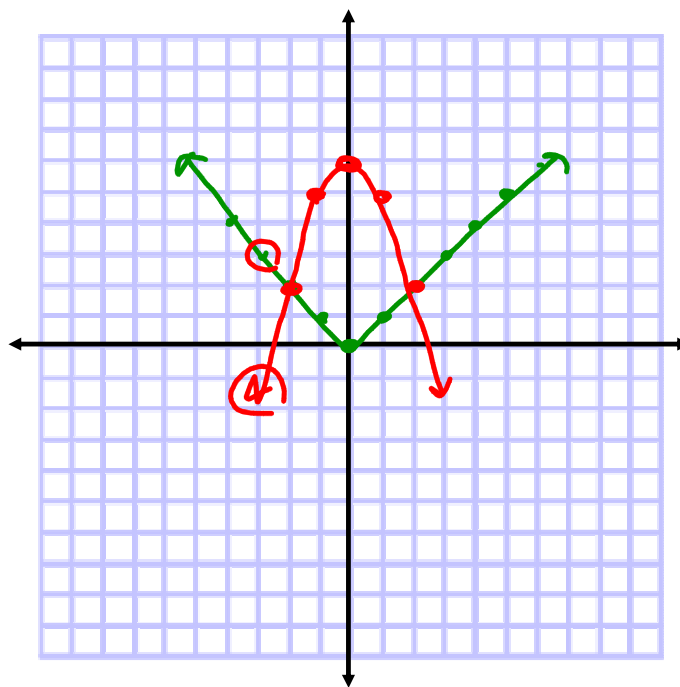
x	y
-2	-8
-1	-2
0	0
1	-2
2	-8

and $g(x) = 2x - 4$

Graph on the axis provided and state all values of x where $f(x) = g(x)$



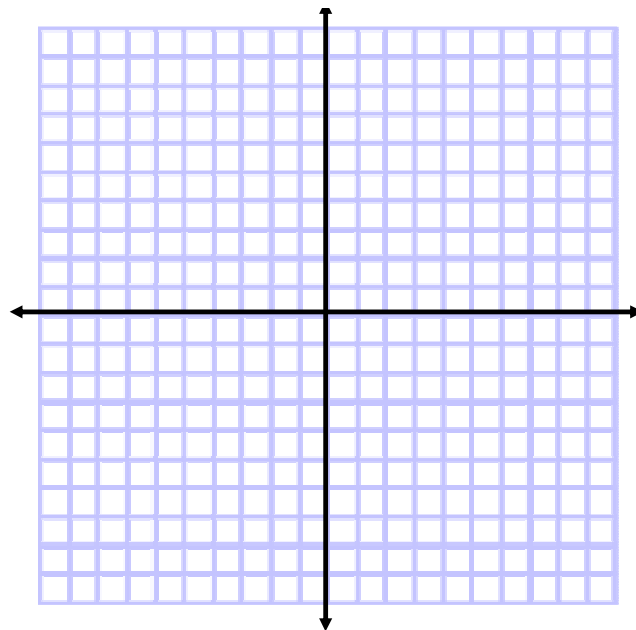
Graph $f(x) = |x|$ and $g(x) = -x^2 + 6$ on the grid below. Does $f(-2) = g(-2)$? Use your graph to explain why or why not.



Graph both functions:

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

$$f(x) = \begin{cases} 2x + 1, & x \leq -1 \\ 2 - x^2, & x > -1 \end{cases}$$



How many values of x satisfy the equation $f(x) = g(x)$? Explain your answer, using evidence from your graphs.

