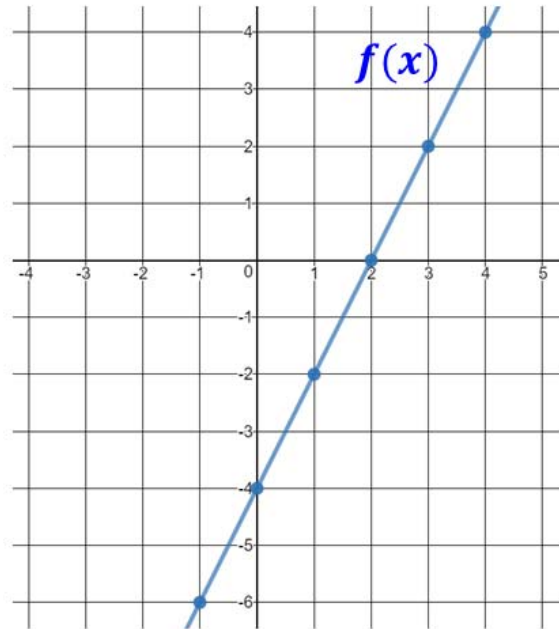


Objective: Compare two functions using a graph.

Concept



Find $f(1)$.

Find $f(1)$ means: If $x = 1$, determine the corresponding y value for the function $f(x)$.

Therefore, $f(1) = -2$.

$$f(0) = \underline{-4}$$

$$f(3) = \underline{2}$$

Objective: Compare two functions using a graph.

Ex) Find each value.

$$f(6) = \underline{0}$$

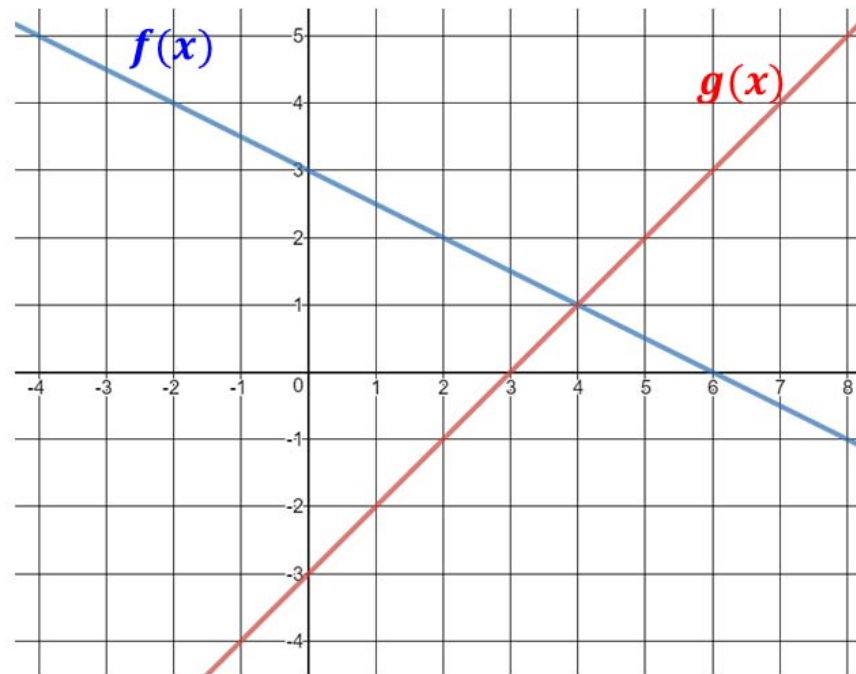
$$g(6) = \underline{3}$$

$$f(2) - g(2) = \underline{2} - \underline{(-1)} = \underline{3}$$

$$g(1) + f(-2) = \underline{-2} + \underline{(4)} = \underline{2}$$

$$f(4) = \underline{1}$$

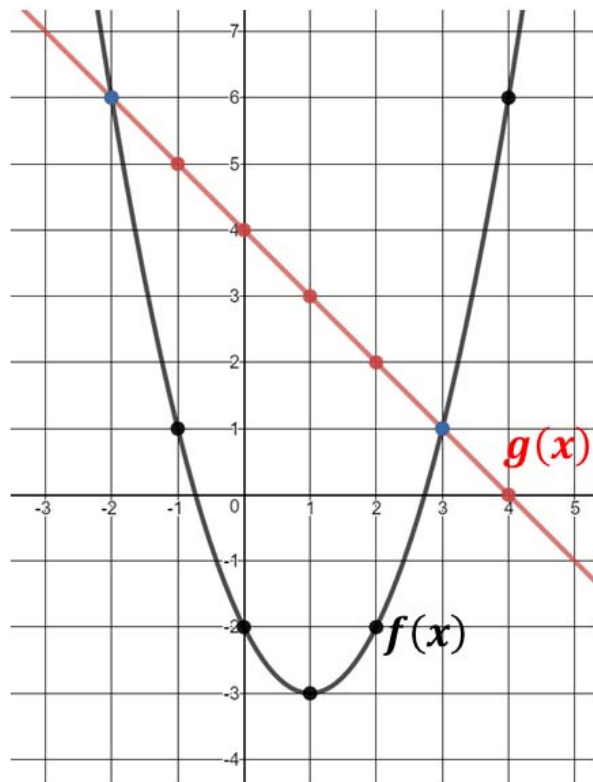
$$g(4) = \underline{1}$$



Objective: Compare two functions using a graph.

Concept

Where is $f(x) = g(x)$? means: for what value(s) of x do the two functions have the same y value. This can be determined by finding where the graphs of two functions intersect.



Where is $f(x) = g(x)$?

For example: Since $f(-2) = 6$ and $g(-2) = 6$, $f(x) = g(x)$ at $x = -2$.

and

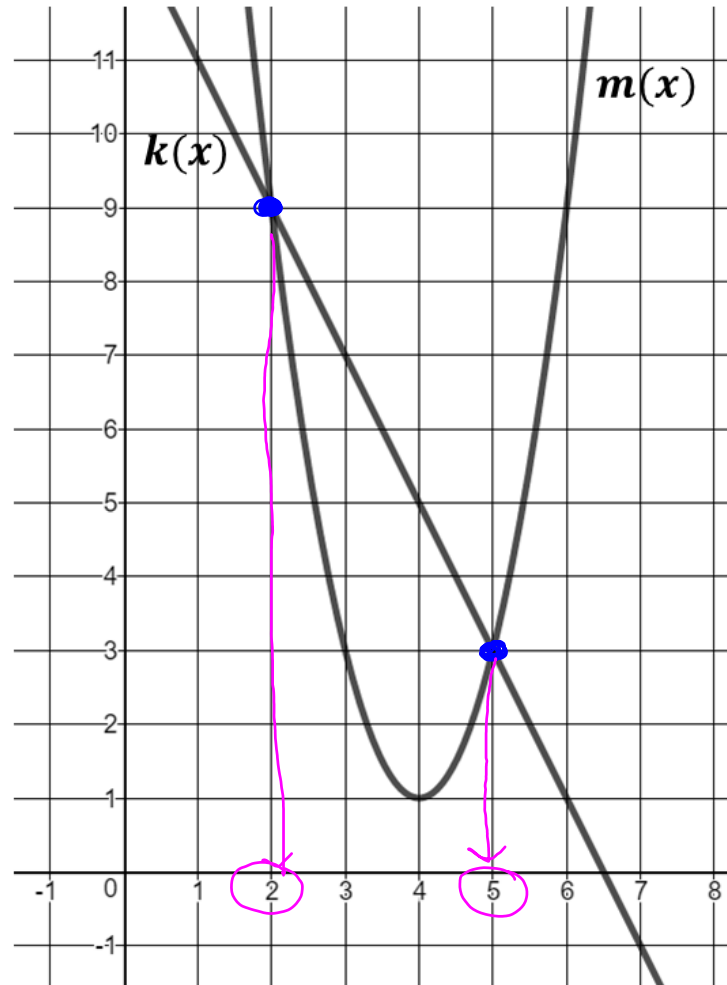
Since $f(3) = 1$ and $g(3) = 1$, $f(x) = g(x)$ at $x = 3$.

Objective: Compare two functions using a graph.

Ex) Find where $k(x) = m(x)$.

$x = ?$ when y values
are the same

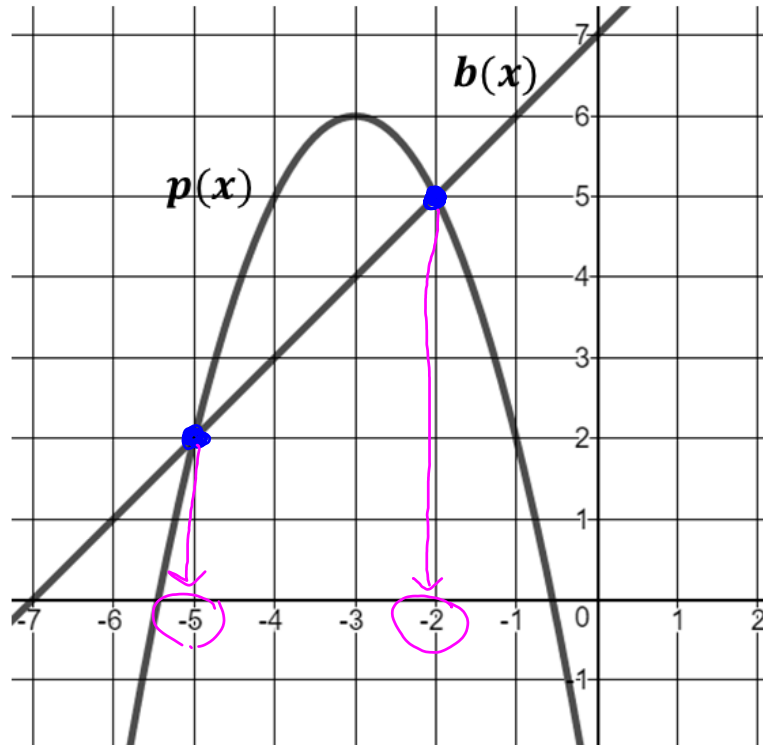
$k(x) = m(x)$
at $x = 2$ and $x = 5$



Objective: Compare two functions using a graph.

Ex) Find where $p(x) = b(x)$.

$p(x) = b(x)$ at
 $x = -5$ and $x = -2$



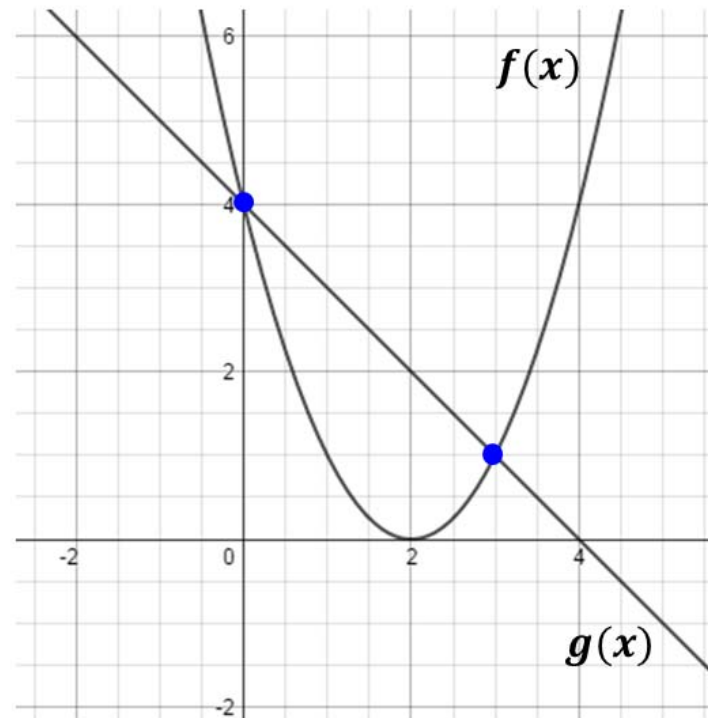
Objective: Compare two functions using a graph.

Concept: Find where $f(x) - g(x) = 0$.

Using algebra to isolate $f(x)$, we can see that $f(x) - g(x) = 0$ means the same thing as $f(x) = g(x)$.

$$\begin{array}{r} f(x) - g(x) = 0 \\ \quad + g(x) \quad + g(x) \\ \hline f(x) = g(x) \end{array}$$

Therefore, $f(x) - g(x) = 0$ at $x = 0$ and $x = 3$.

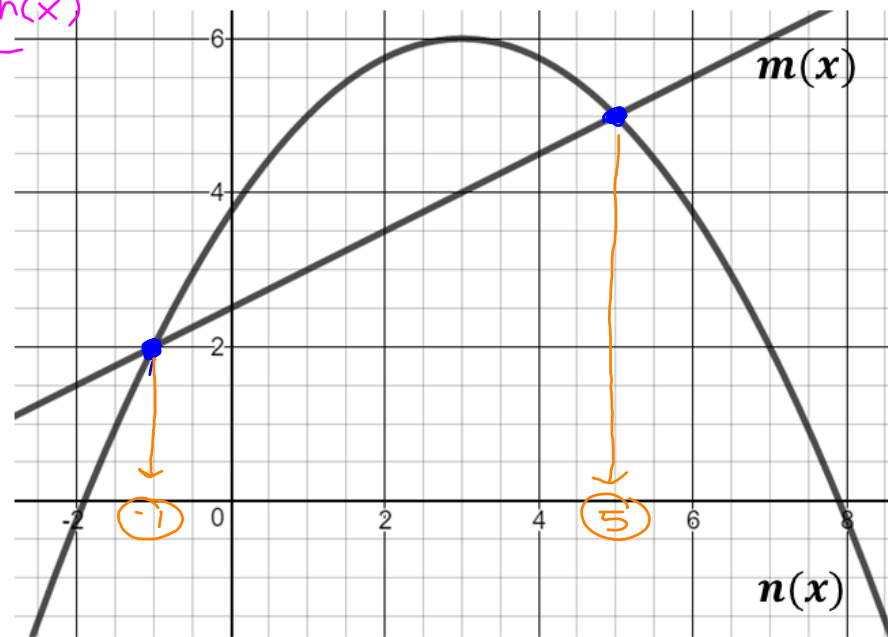


Objective: Compare two functions using a graph.

Ex) Find where $m(x) - n(x) = 0$.

same as $m(x) = n(x)$

$m(x) - n(x) = 0$
at $x = -1$ and $x = 5$



Objective: Compare two functions using a graph.

Closure

True/False: Two functions are equal to each other at the y-coordinate of a point of intersection. Explain your reasoning.

False. Two functions have the same value (are equal) at the x-coordinate of a point of intersection.

True/False: Two functions have a difference of zero at the x-coordinate of a point of intersection. Explain your reasoning.

True. Two functions have a difference of zero at the x-coordinate of a point of intersection because the y values are equal making the difference 0.