

Daily Quiz

Write in slope-intercept form and then graph.

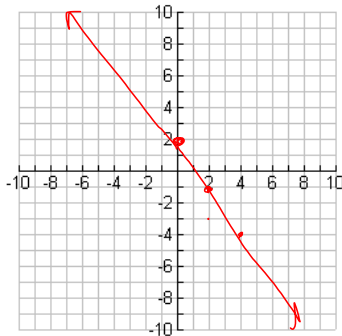
$$3x + 2y = 4$$

$$-\frac{3x}{2} - \frac{3x}{2} = -\frac{4}{2}$$

$$\frac{2y}{2} = -\frac{3x}{2} + \frac{4}{2}$$

$$y = -\frac{3}{2}x + 2$$

$m \rightarrow$   $b$



Mod 1: Characteristics of Functions Graphs

Lesson 1.2

Objective: We will be able to identify some of the attributes of a function, and how they relate to the functions graph.

Vocabulary

**Increase** - The graph of a function is increasing on an interval rises from left to right on that interval.

**Decrease** - The graph of a function is decreasing on an interval falls from left to right on that interval.

**Average rate of change** - is the ratio of the change in the function values,  $f(x_2) - f(x_1)$ , to the change in the x-values  $x_2 - x_1$ .

$$\text{Slope } m = \frac{\Delta y}{\Delta x} = \frac{f(x_2) - f(x_1)}{x_2 - x_1} = \frac{y - y_1}{x - x_1}$$

Vocabulary

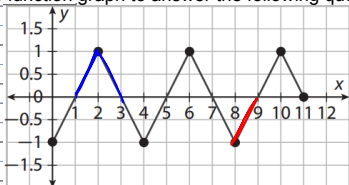
**Maximum value** - the value of  $f(x)$  at a point where a function changes from increasing to decreasing. It is the point that appears higher than all nearby point on the graph of the function.

**Minimum value** - the value of  $f(x)$  at a point where a function changes from decreasing to increasing. It is the point that appears lower than all nearby point on the graph of the function.

**Zero's** - of a function are the values of  $x$  for which  $f(x) = 0$ . On a graph of the function, the zeros are the  $x$ -intercepts.

1 Example

Use the function graph to answer the following question.

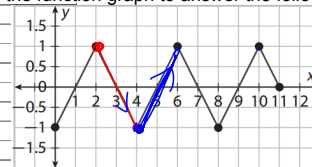


a. The value of the function on the interval  $\{x | 1 < x < 3\}$  are positive/negative. positive

b. The value of the function on the interval  $\{x | 8 < x < 9\}$  are positive/negative. Negative

1 Example

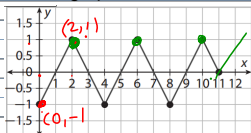
Use the function graph to answer the following question.



c. The given function is increasing/decreasing on the interval  $\{x | 2 < x < 4\}$ . decreasing

d. The given function is increasing/decreasing on the interval  $\{x | 4 < x < 6\}$ . increasing

1 Example Use the function graph to answer the following question.



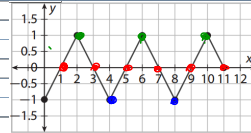
e. What is the given function's average rate of change on the interval  $\{x | 0 \leq x \leq 2\}$ ?

$\Delta y = \frac{y_2 - y_1}{x_2 - x_1} = \frac{1 - (-1)}{2 - 0} = \frac{2}{2} = 1$

f. At how many points does the given function change from increasing to decreasing?

3 times

1 Example Use the function graph to answer the following question.



g. What is the function's value at these points? 1

h. At how many points does the given function change from decreasing to increasing? 2 times

i. What is the function's value at these points? -1

j. How many x-intercepts does the given function's graph have? 6

k. Identify the zeros of the function. 1, 3, 5, 7, 9, 11

3 Example A grocery store stocks shelves with 100 cartons of strawberries before the store opens. For the first 3 hours the store is open, the store sells 20 cartons per hour. Over the next 2 hours, no cartons of strawberries are sold. The store then restocks 10 cartons each hour for the next 2 hours. In the final hour that the store is open, 30 cartons are sold. Sketch a graph of the function.

Strawberries on Shelves

