


Objective:

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

Functions : pass vertical  
line test, ex linear  
 $y = mx + b$

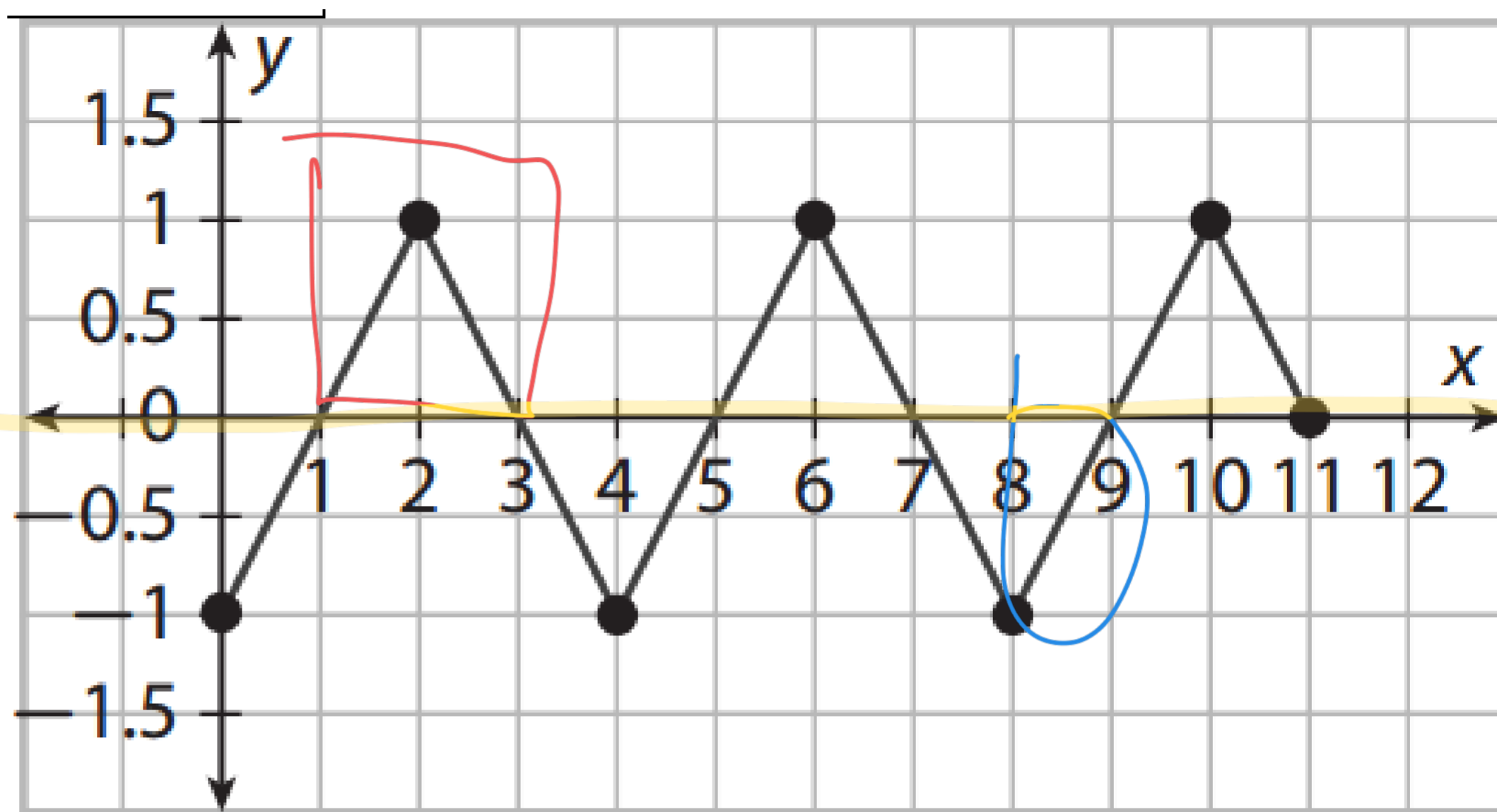
Non functions:



**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

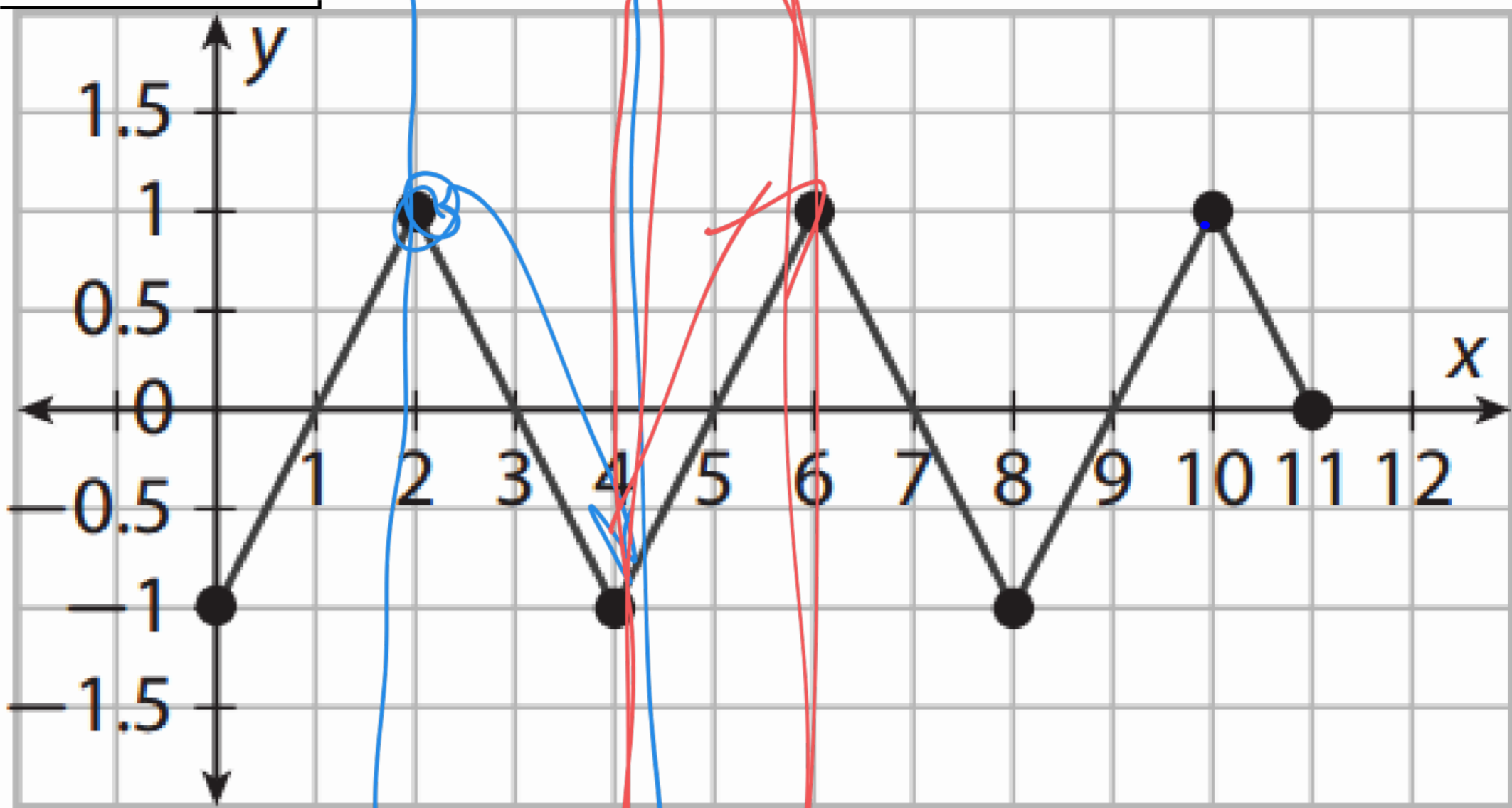
above x-axis

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

below the x-axis why?

**1** Example

Use the function graph to answer the following question.



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

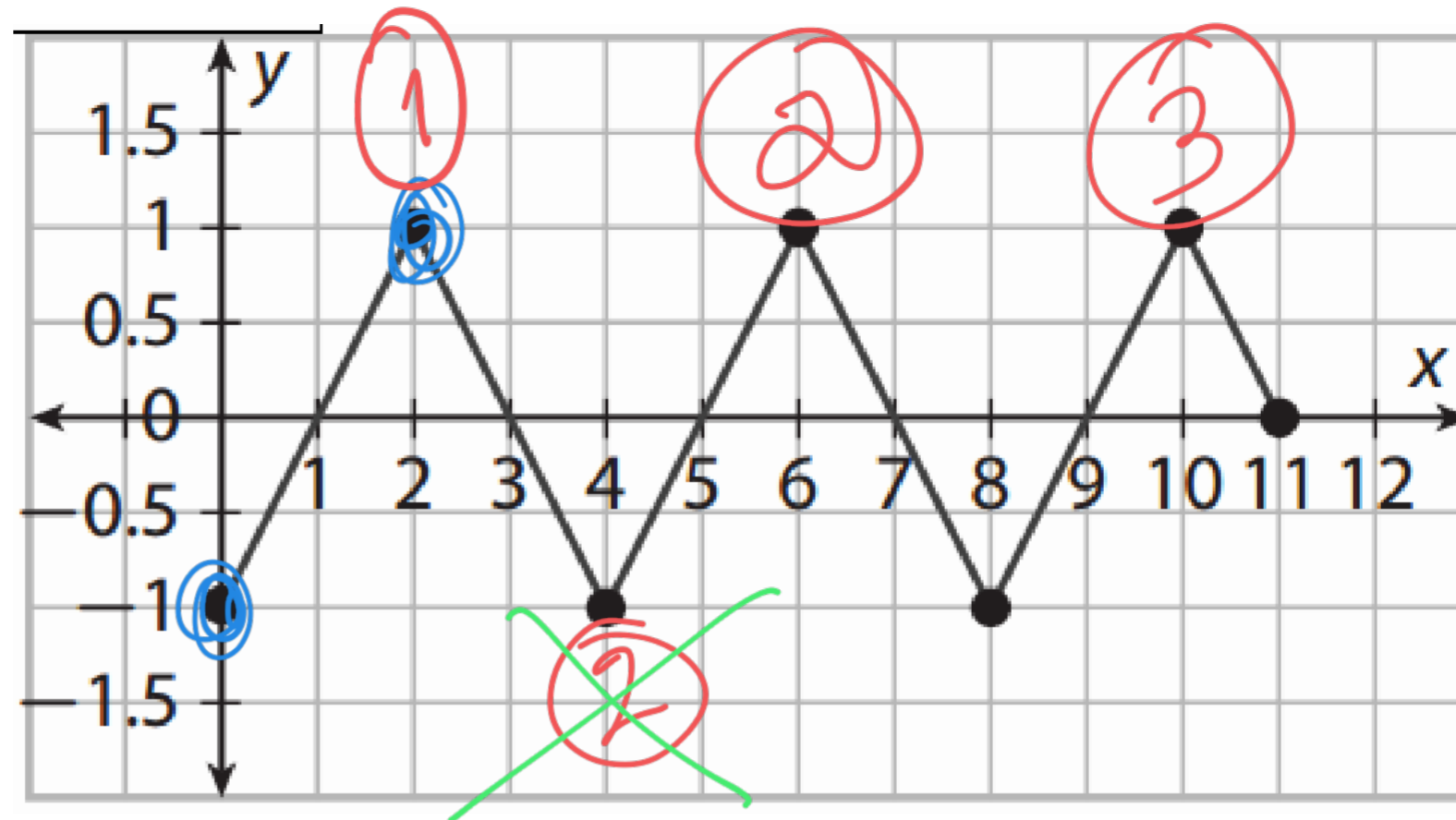
decreasing

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  $\{x \mid 0 \leq x \leq 2\}$ .

$$\frac{\text{rise}}{\text{run}} = \frac{2}{2} = 1$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

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

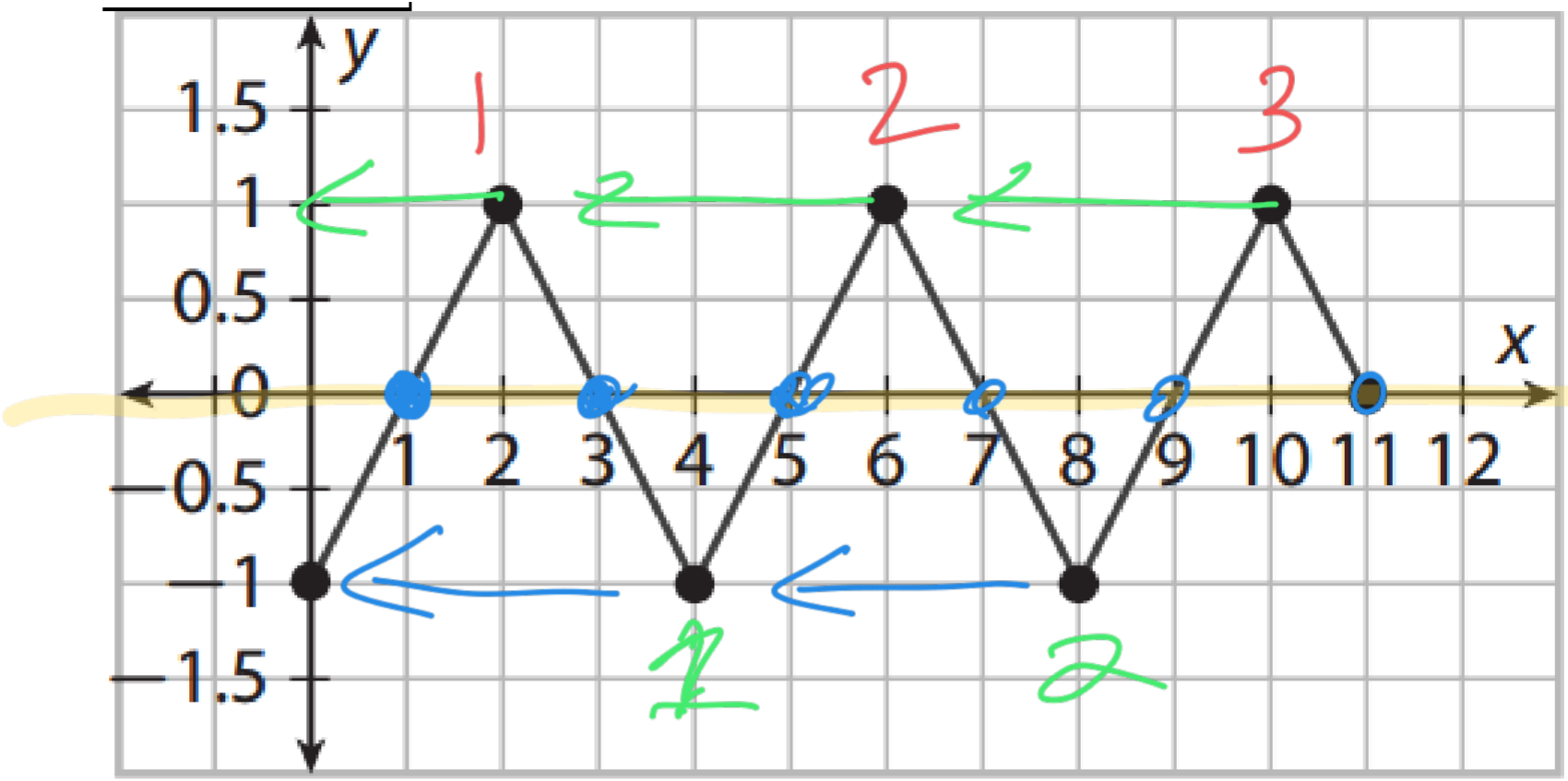
\_\_\_\_\_

\_\_\_\_\_

3 times

**1** Example

Use the function graph to answer the following question.



15 min more on Monday

- 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
- 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. (1,0)

(3,0) (9,0)  
 (5,0) (11,0)  
 (7,0)

**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.

