Name: Key
Unit 6

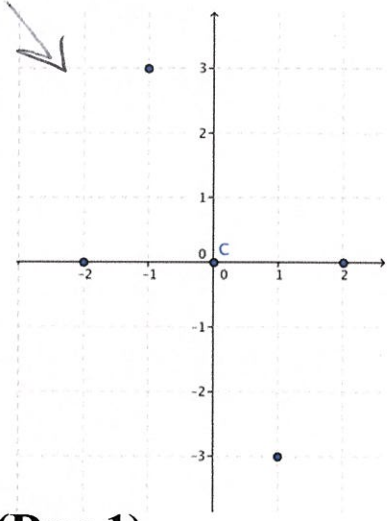
Date:
LESSON 7

Do Now:

a. Is the accompanying graph a function? Explain why or why not.

Yes, it passes the V.L.T.

Not continuous



b. State the domain.

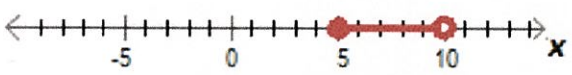
$\{-2,-1,0,1,2\}$

c. State the range.

$\{-3,0,3\}$

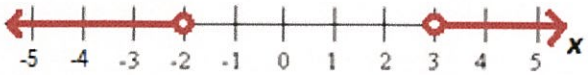
AIM: Domain & Range (Day 1)

Let's review how to write the domain of number lines in set builder notation and interval notation:



Domain: $\{x \mid 5 \le x < 10\}$

$[5, 10)$



Domain: $\{x \mid x < -2 \text{ or } x > 3\}$

$(-\infty, -2) \cup (3, \infty)$

1. The accompanying graph shows the heart rate, in beats per minute, of a jogger during a 4-minute interval. What is the **range** of the jogger's heart rate during this interval?

(1) 0-4

(2) 1-4

(3) 0-110

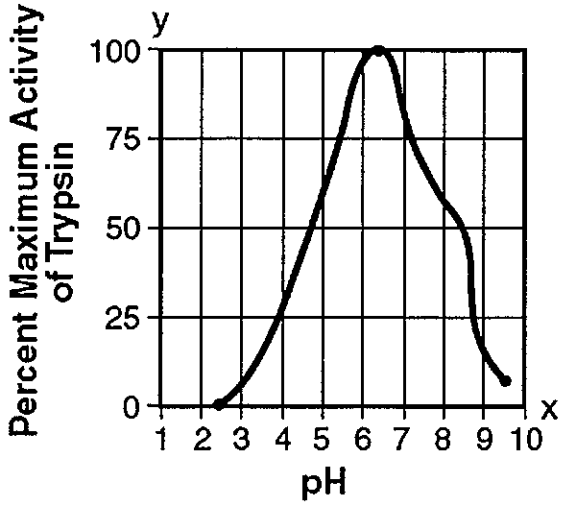
(4) 60-110

b. Write the **domain** of the jogger's heart rate in set builder notation and interval notation.

Domain $\{x \mid 0 \le x \le 4\}$

$[0, 4]$

2. Data collected during an experiment are shown in the accompanying graph. What is the **range** of this set of data?



(1) $2.5 \le y \le 9.5$

(2) $2.5 \le x \le 9.5$

(3) $0 \le y \le 100$

(4) $1 \le x \le 10$

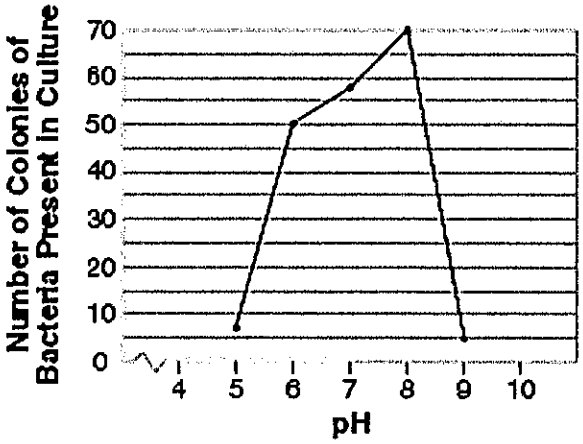
b. Write the **domain** of the data in set builder notation

$\{x \mid 2.5 \le x \le 9.5\}$

c. Write the **domain** of the data in set interval notation.

$[2.5, 9.5]$

3. The accompanying graph illustrates the presence of a certain strain of bacteria at various pH levels. What is the **range** of this set of data?



(1) $5 \le x \le 9$

(2) $5 \le x \le 70$

(3) $0 \le y \le 70$

(4) $5 \le y \le 70$

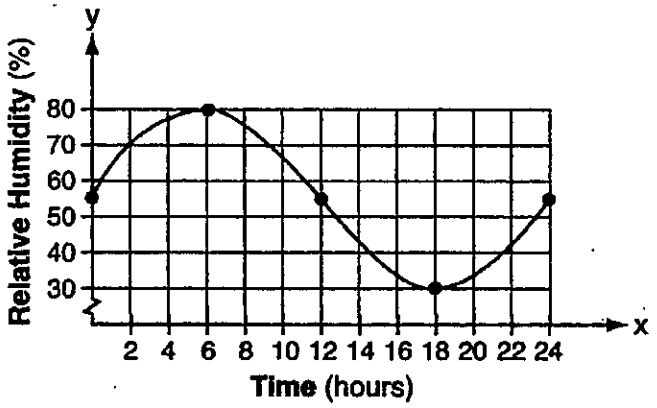
b. Write the **domain** of the data in set builder notation

$\{x \mid 5 \le x \le 9\}$

c. Write the **domain** of the data in set interval notation.

$[5, 9]$

4. A meteorologist drew the accompanying graph to show the changes in relative humidity during a 24-hour period in New York City. What is the **range** of this set of data?



(1) $0 \le y \le 24$

(2) $0 \le x \le 24$

(3) $30 \le y \le 80$

(4) $30 \le x \le 80$

b. Write the **domain** of the data in set builder notation

$\{x \mid 0 \le x \le 24\}$

c. Write the **domain** of the data in set interval notation.

$[0, 24]$

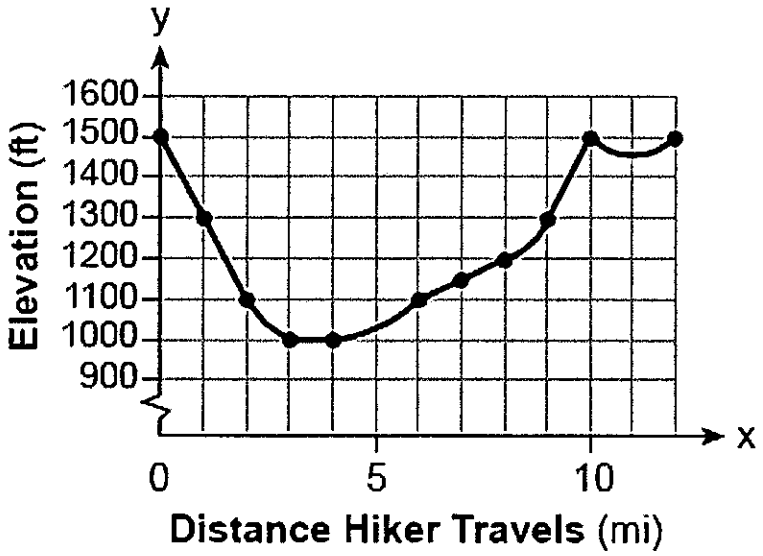
5. The accompanying graph shows the elevation of a certain region in New York State as a hiker travels along a trail. What is the **domain** of this function?

(1) $1{,}000 \le x \le 1{,}500$

(2) $1{,}000 \le y \le 1{,}500$

(3) $0 \le x \le 12$

(4) $0 \le y \le 12$



b. Write the **range** of the function in set builder notation

$\{y \mid 1000 \le y \le 1500\}$

b. Write the **range** of the function interval notation.

$[1000, 1500]$

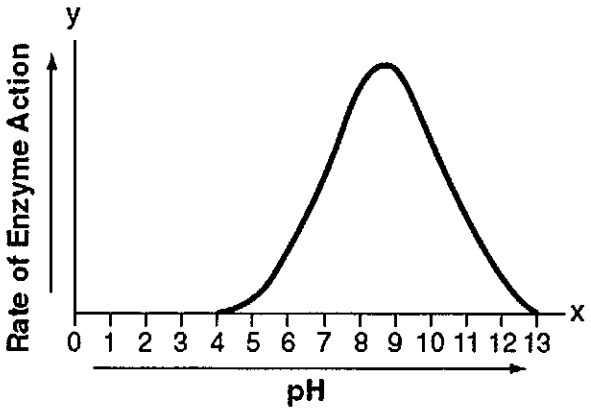
6. The effect of pH on the action of a certain enzyme is shown on the accompanying graph. What is the **domain** of this function?

(1) $4 \le x \le 13$

(2) $4 \le y \le 13$

(3) $x \ge 0$

(4) $y \ge 0$



7. What is the domain of $f(x) = 2^x$?

(1) all integers (2) all real numbers (3) $x \ge 0$ (4) $x \le 0$