

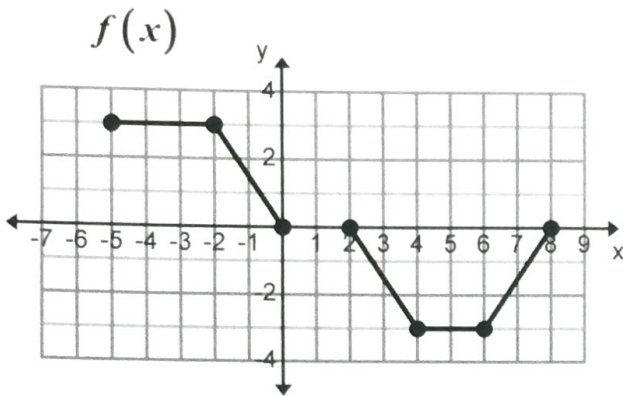
Name: Selected Answers Period: \_\_\_\_\_

Score: \_\_\_\_\_ / \_\_\_\_\_ %

**HW 2-6 HONORS: All Characteristics of Functions**

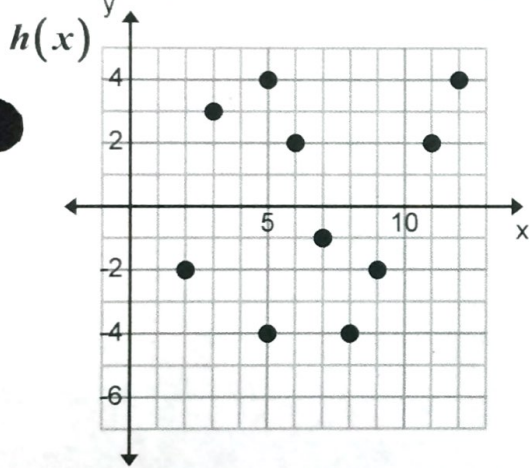
Answer problems #1-2 using SET BUILDER NOTATION.

1. Is the graph below a function? yes Why? passes the VLT



Domain: \_\_\_\_\_ Range: \_\_\_\_\_  
 Continuity: (circle your answer) Continuous, Non-Continuous, or Discrete?  
 Increasing: \_\_\_\_\_ Decreasing: \_\_\_\_\_  
 minimum: \_\_\_\_\_ maximum: \_\_\_\_\_  
 Positive: \_\_\_\_\_ Negative: \_\_\_\_\_  
 x-intercept: \_\_\_\_\_ y-intercept: \_\_\_\_\_

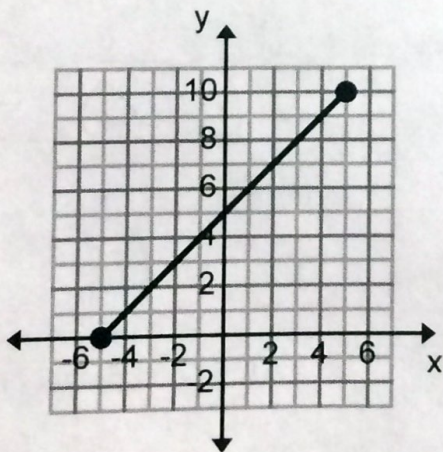
2. Is the graph below a function? \_\_\_\_\_ Why? \_\_\_\_\_



Domain: {2, 3, 5, 6, 7, 8, 9, 11, 12} Range: {-4, -2, -1, 2, 3, 4}  
 Continuity: (circle your answer) Continuous, Non-Continuous, or Discrete?  
 Increasing: \_\_\_\_\_ Decreasing: \_\_\_\_\_  
 minimum: \_\_\_\_\_ maximum: \_\_\_\_\_  
 Positive: \_\_\_\_\_ Negative: \_\_\_\_\_  
 x-intercept: \_\_\_\_\_ y-intercept: \_\_\_\_\_

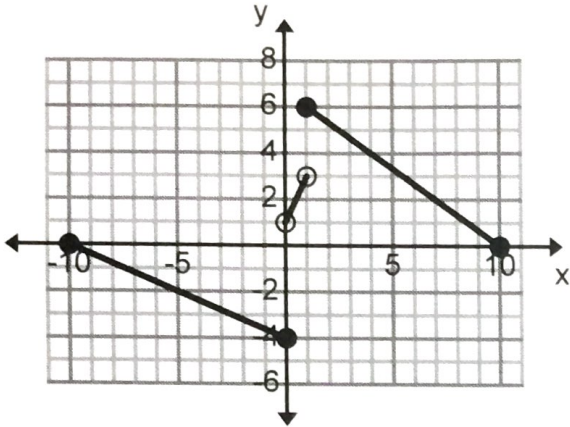
Answer problems #3-8 using INTERVAL NOTATION.

3. Is the graph below a function? \_\_\_\_\_ Why? \_\_\_\_\_



Domain: \_\_\_\_\_ Range: \_\_\_\_\_  
 Continuity: (circle your answer) Continuous, Non-Continuous, or Discrete?  
 Increasing: \_\_\_\_\_ Decreasing: \_\_\_\_\_  
 minimum: \_\_\_\_\_ maximum: \_\_\_\_\_  
 Positive: \_\_\_\_\_ Negative: \_\_\_\_\_  
 x-intercept: \_\_\_\_\_ y-intercept: \_\_\_\_\_

4. Is the graph below a function? \_\_\_\_\_ Why? \_\_\_\_\_



Domain: \_\_\_\_\_ Range: \_\_\_\_\_

Continuity: (circle your answer) Continuous, Non-Continuous, or Discrete?

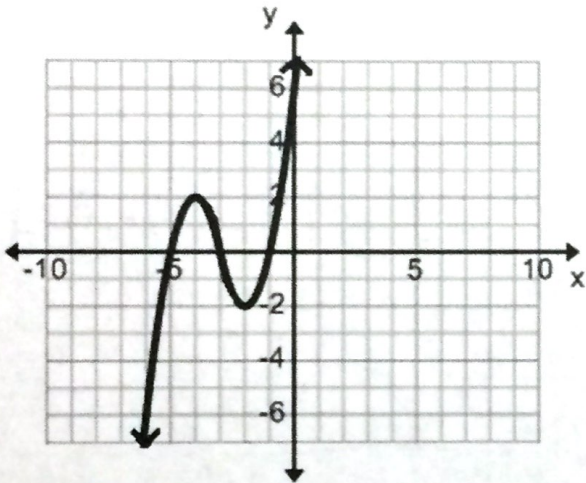
Increasing:  $(0, 1)$  Decreasing:  $(-10, 0)$   $(1, 10)$

minimum: \_\_\_\_\_ maximum: \_\_\_\_\_

Positive: \_\_\_\_\_ Negative: \_\_\_\_\_

x-intercept: \_\_\_\_\_ y-intercept: \_\_\_\_\_

5. Is the graph below a function? \_\_\_\_\_ Why? \_\_\_\_\_



Domain: \_\_\_\_\_ Range: \_\_\_\_\_

Continuity: (circle your answer) Continuous, Non-Continuous, or Discrete?

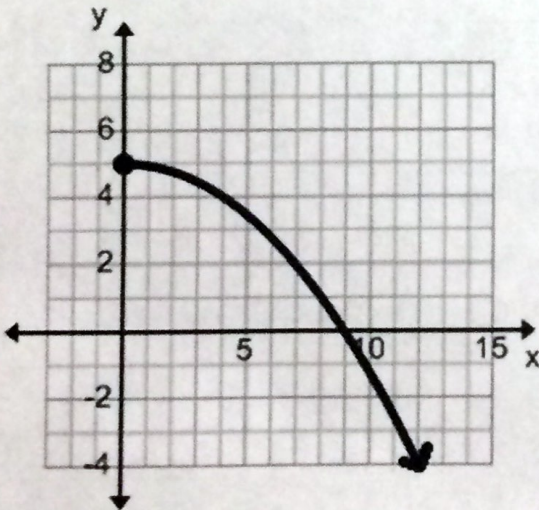
Increasing: \_\_\_\_\_ Decreasing: \_\_\_\_\_

minimum: None maximum: None

Positive: \_\_\_\_\_ Negative: \_\_\_\_\_

x-intercept: \_\_\_\_\_ y-intercept: \_\_\_\_\_

6. Is the graph below a function? \_\_\_\_\_ Why? \_\_\_\_\_



Domain: \_\_\_\_\_ Range: \_\_\_\_\_

Continuity: (circle your answer) Continuous, Non-Continuous, or Discrete?

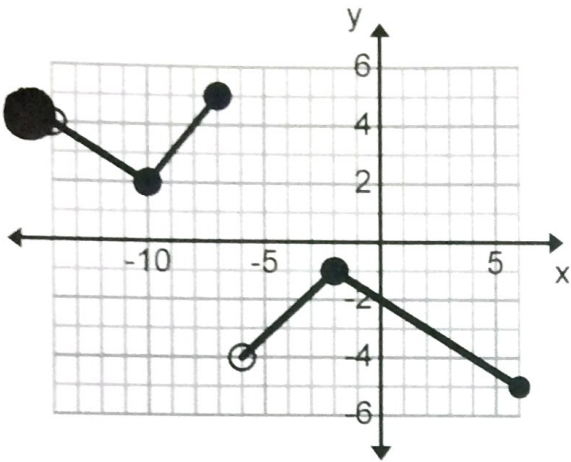
Increasing: \_\_\_\_\_ Decreasing: \_\_\_\_\_

minimum: \_\_\_\_\_ maximum: \_\_\_\_\_

Positive:  $[0, 9)$  Negative:  $(9, \infty)$

x-intercept: \_\_\_\_\_ y-intercept: \_\_\_\_\_

7. Is the graph below a function? \_\_\_\_\_ Why? \_\_\_\_\_



Domain: \_\_\_\_\_ Range: \_\_\_\_\_

Continuity: (circle your answer) Continuous, Non-Continuous, or Discrete?

Increasing: \_\_\_\_\_ Decreasing: \_\_\_\_\_

minimum: \_\_\_\_\_ maximum: \_\_\_\_\_

Positive: \_\_\_\_\_ Negative: \_\_\_\_\_

x-intercept: None y-intercept:  $f(0) = -2$

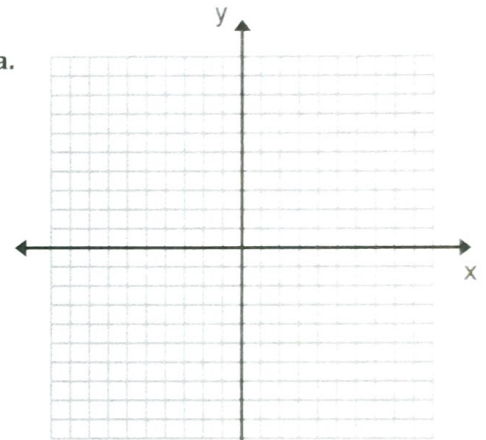
For #8-10, draw a possible graphed function that fits all of the given criteria.

8. Domain contains all Real numbers between  $-2$  and  $3$ .

Range contains all Real numbers between  $3$  and  $7$ .

The function is increasing from  $-2$  to  $0$  and decreasing after  $0$ .

The function is not continuous at every point.



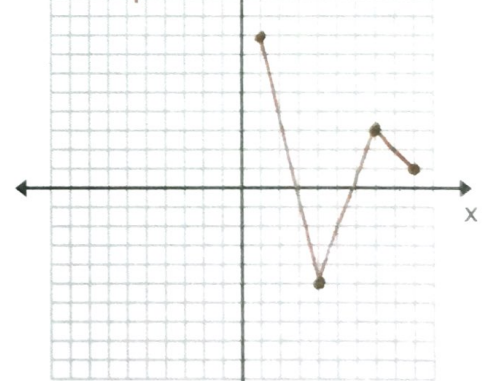
9. The function has a minimum at  $-5$ .

The function has a maximum at  $8$ .

The function has two intervals on which it is decreasing and one interval on which it is increasing.

The domain of the functions contains all Real numbers from  $1$  to  $9$ .

sample answer



10. This function is not continuous anywhere.

The function contains only seven elements in its domain.

The values of the domain are between  $-10$  and  $2$ .

The values of the range are between  $-1$  and  $1$ .

