Outcome 6 Review

Name: _____

Level 2

Determine whether a relation is a function.

- **From a table of values: each x value has to be different. If any x value repeats, the relation is NOT a function.**
- **From a set of ordered pairs: each x value has to be different. If any x value repeats, the relation is NOT a function**
- **From a graph: use the vertical line test. If any vertical line intersects the graph in more than one place the relation is NOT a function.**

1. For each relation below, state whether it is a function (write yes or no, do not leave blank)

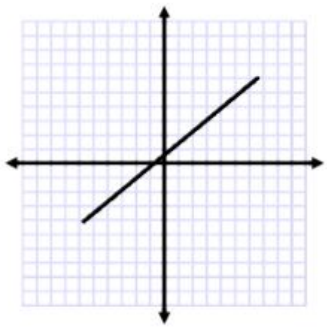
a)

x	y
5	2
6	3
7	2
9	3
12	2

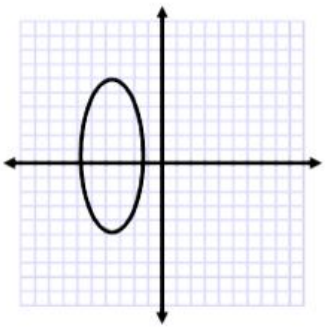
b)

x	y
-4	5
-3	6
-2	7
-2	8
-1	9

c)



d)



e) {(4, 2), (3, 0), (2, -2), (1, -4)}

f) {(1, 5), (-1, 4), (1, 3), (-1, 2)}

State the domain and range from discrete data.

- **Domain is the set of possible x values. When listing the domain of discrete data, be sure to use {} and separate each value with a comma (,). If a domain value repeats, you only need to list it once in your set.**
- **Range is the set of possible y values. When listing the range of discrete data, be sure to use {} and separate each value with a comma (,). If a range value repeats, you only need to list it once in your set.**

Example: State the domain and range of the following:

x	Y
-3	4
-2	5
-1	6
0	5
1	7

The domain is the set of the x values and you list it as: Domain: {-3, -2, -1, 0, 1}

The range is the set of the y values and you list it as: Range: {4, 5, 6, 7} Notice we don't list the value of 5 twice.

2. State the domain and range of the following:

a)

x	Y
3	2
6	3
9	4
12	5
15	6

b)

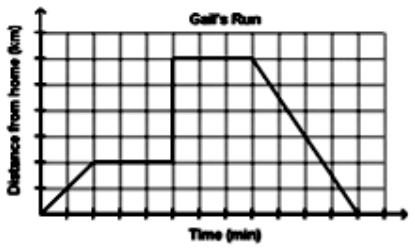
x	Y
2	4
3	5
2	6
3	7

Level 3

I can match a graph to its given situation

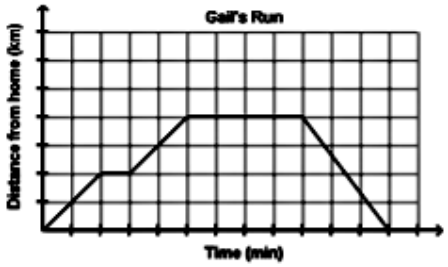
3. Gail leaves the house for her morning jog. She stops for a quick drink, then continues jogging before stopping again to chat with a friend. She then jogs back home. Which graph best represents Gail's run?

a.

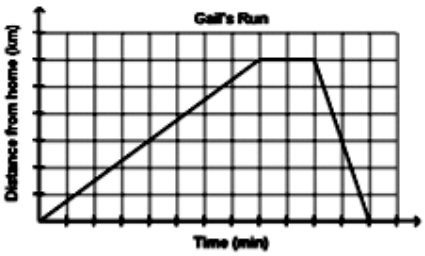


b.

c.



d.



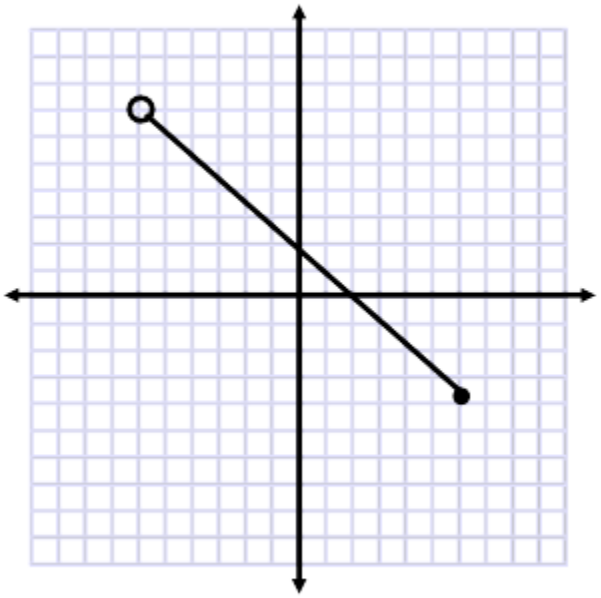
I can determine the domain and range of any relation

- **Domain: Find the "left" most point on the graph. The x value of this point is your starting point for your domain. If there is not a "left" most point and the graph continues to the left, your starting point is $-\infty$. Next find the "right" most point on the graph. The x value of this point is your ending point for your domain. If there is not a "right" most point and the graph continues to the right, your ending point is ∞. You will either use [or (brackets. You use [if the point is included – if the point is shaded in. You use (if the point is not included – if the point is open or if it continues to infinity.**
- **Range: Find the "lowest" point on the graph. The y value of this point is your starting point for your range. If there is not a "lowest" point and the graph continues down, your starting point is $-\infty$. Next find the "highest" point on the graph. The y value of this point is your ending point for your**

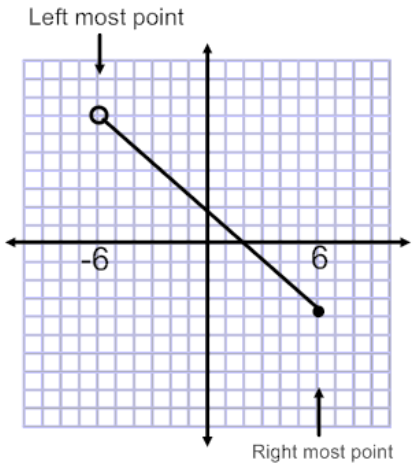
range. If there is not a "highest" point and the graph continues up, your ending point is ∞. You will either use [or (brackets. You use [if the point is included – if the point is shaded in. You use (if the point is not included – if the point is open or if it continues to infinity.

Example

Determine the domain and range of the following:



- **Find the domain:**

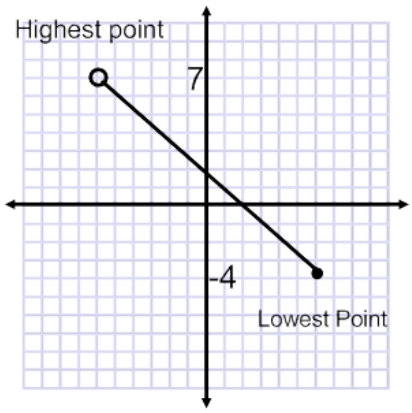


Step 1: Look for the x value of the left most point. This is found at x = -6. This is an open dot, so we will use (.

Step 2: Look for the x value of the right most point. This is found at x = 6. This is a shaded/closed dot, so we will use].

Step 3: Write the domain: (-6, 6]

- **Find the range:**

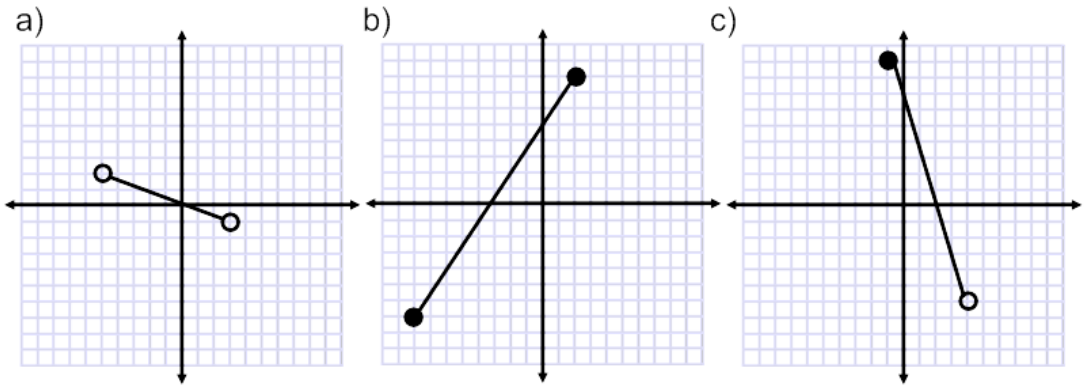


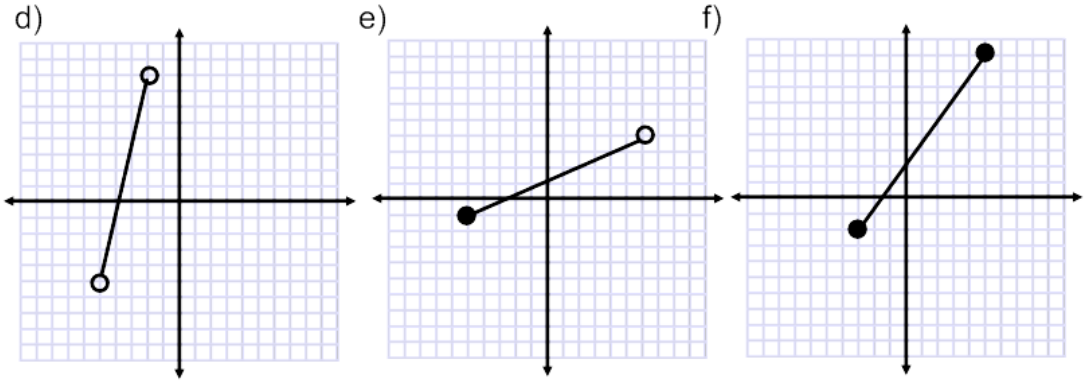
Step 1: Look for the y value of the lowest point. This is found at y = -4. This is a shaded/closed dot, so we will use [.

Step 2: Look for the y value of the highest point. This is found at y = 7. This is an open dot, so we will use).

Step 3: Write the range: [-4, 7)

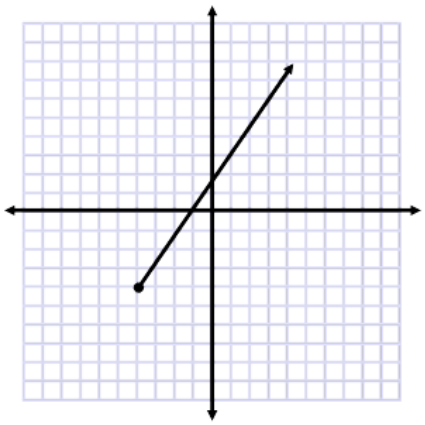
4. Determine the domain and range of each of the following:



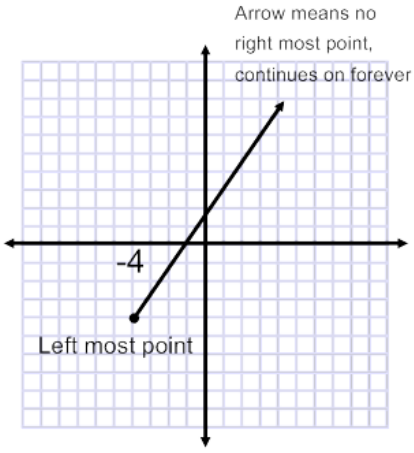


Example

Determine the domain and range of the following:



- **Find the domain**

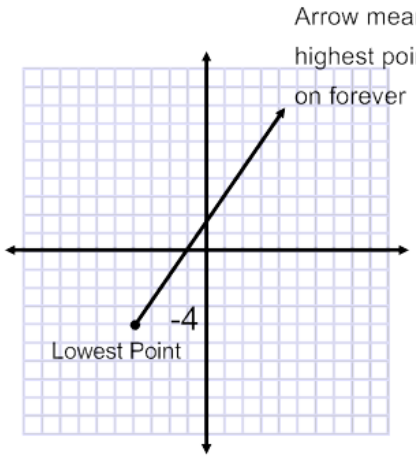


Step 1: Look for the x value of the left most point. This is found at x = -4. This is a shaded/closed dot, so we will use [.

Step 2: Look for the x value of the right most point. There is an arrow, which means the graph continues right towards ∞. We will use).

Step 3: Write the domain: $[-4,\infty)$

- **Find the range**



Step 1: Look for the y value of the lowest point. This is found at y = -4. This is a shaded/closed dot, so we will use [.

Step 2: Look for the y value of the highest point. There is an arrow, which means the graph continues upwards towards ∞. We will use).

Step 3: Write the range: $[-4, \infty)$

5. Determine the domain and range