

Module 2 Topic 3 Review

Essential Standard (8.F.A.1): I can determine if the given relation is a function and justify my answer.

1. Which of the following are ways that you can tell if a relation is a function. (SELECT ALL THAT APPLY)

- a. If every input has only one output
- b. If no x-values repeat
- c. If all of the x-values are different.
- d. If all of the y-values are different
- e. If the graph passes the vertical line test
- f. If the graph passes the horizontal line test
- g. If every output has only one input

2. Two input/output tables are shown below

Table A

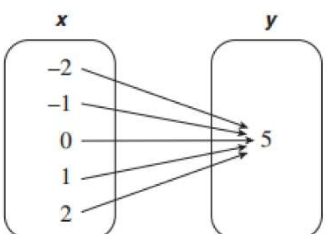
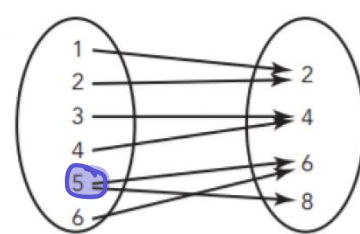
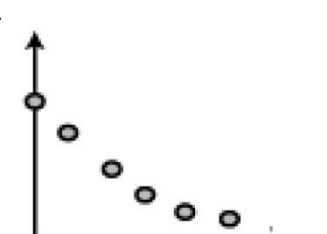
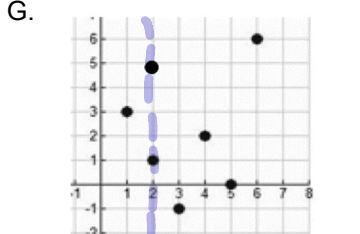
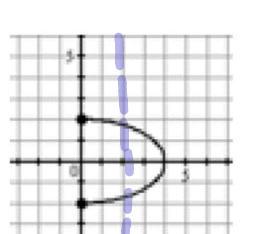
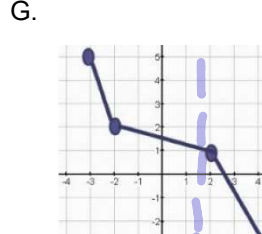
input	output
3	-5
2	-4
1	-3
2	-2
3	-1

Table B

input	output
-8	14
-2	
1	6
	0
9	-2

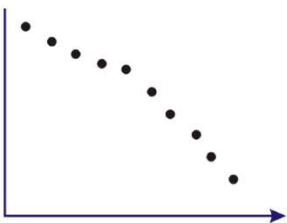
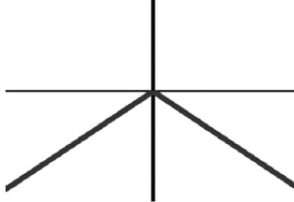
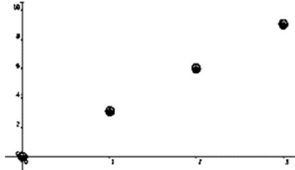
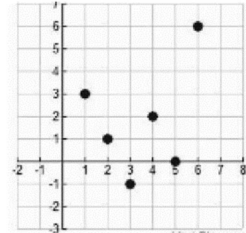
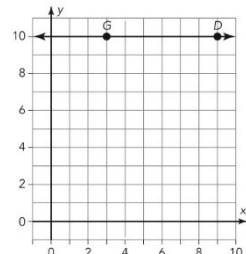
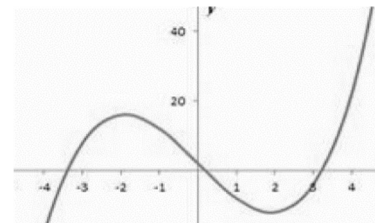
- a. Is Table A function? Why or why not?
No, the inputs 2 & 3 have more than one output.
- b. What number(s) could you fill in the empty input space so that Table B will be a function?
Any # other than 8, -2, 1, 9.
- c. What number(s) could you fill in the empty output space so Table B will be a function?
Any #.

3. Determine if each relation is a FUNCTION or is NOT A FUNCTION.

<p>A.</p>  <p style="text-align: center;">Function</p>	<p>B.</p>  <p style="text-align: center;">Not a Function</p>	<p>C.</p> <p>{(2,3), (-3,5), (4,1), (2,9)}</p> <p style="text-align: center;">Not a Function</p>																													
<p>F.</p>  <p style="text-align: center;">Function</p>	<p>G.</p>  <p style="text-align: center;">Not a Function</p>	<p>F.</p>  <p style="text-align: center;">Not a Function</p>	<p>G.</p>  <p style="text-align: center;">Function</p>																												
<p>H.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>x</th> <th>y</th> </tr> </thead> <tbody> <tr> <td>-12</td> <td>14</td> </tr> <tr> <td>-5</td> <td>35</td> </tr> <tr> <td>7</td> <td>49</td> </tr> <tr> <td>12</td> <td>70</td> </tr> </tbody> </table> <p style="text-align: center;">Function</p>	x	y	-12	14	-5	35	7	49	12	70	<p>I.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>x</th> <th>y</th> </tr> </thead> <tbody> <tr> <td>-5</td> <td>2</td> </tr> <tr> <td>0</td> <td>3</td> </tr> <tr> <td>2</td> <td>4</td> </tr> <tr> <td>-5</td> <td>8</td> </tr> </tbody> </table> <p style="text-align: center;">Not a Function</p>	x	y	-5	2	0	3	2	4	-5	8	<p>J.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>X</th> <th>-3</th> <th>0</th> <th>3</th> </tr> </thead> <tbody> <tr> <th>Y</th> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table> <p style="text-align: center;">Function</p>	X	-3	0	3	Y	3	3	3	<p>K. INPUT: Each of the 82 total students in the class OUTPUT: The final grade they receive for the semester.</p> <p style="text-align: center;">Function</p>
x	y																														
-12	14																														
-5	35																														
7	49																														
12	70																														
x	y																														
-5	2																														
0	3																														
2	4																														
-5	8																														
X	-3	0	3																												
Y	3	3	3																												

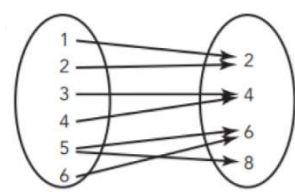
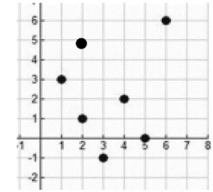
Essential Standard (8.F.A.3): (8.F.B.5): I can describe the characteristics of different types of graphs.

4. Circle all that apply for each graph.

<p>A.</p>  <p>*Discrete *Continuous *Linear * Non-Linear *Increasing *Decreasing *Neither Increasing or Decreasing</p>	<p>B.</p>  <p>*Discrete *Continuous *Linear * Non-Linear *Increasing *Decreasing *Neither Increasing or Decreasing</p>	<p>C.</p>  <p>*Discrete *Continuous *Linear * Non-Linear *Increasing *Decreasing *Neither Increasing or Decreasing</p>
<p>D.</p>  <p>*Discrete *Continuous *Linear * Non-Linear *Increasing *Decreasing *Neither Increasing or Decreasing</p>	<p>E.</p>  <p>*Discrete *Continuous *Linear * Non-Linear *Increasing *Decreasing *Neither Increasing or Decreasing</p>	<p>F.</p>  <p>*Discrete *Continuous *Linear * Non-Linear *Increasing *Decreasing *Neither Increasing or Decreasing</p>

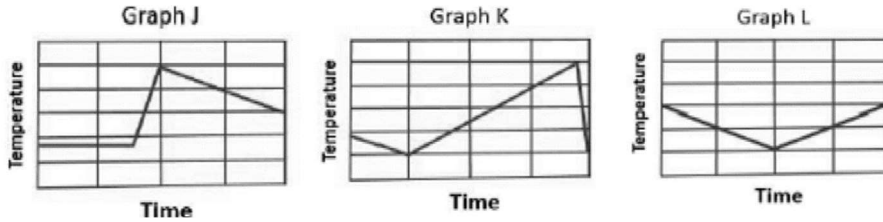
Essential Standard(8.F.A.1): I can identify the domain and range of a relation.

5. Find the domain and range of the following relations.

<p>A</p> <p>$\{(2,1), (-3,5), (4,1), (2,9)\}$</p> <p>Domain: <u>$\{-3, 2, 4\}$</u></p> <p>Range: <u>$\{1, 5, 9\}$</u></p>	<p>B</p>  <p>Domain: <u>$\{1, 2, 3, 4, 5, 6\}$</u></p> <p>Range: <u>$\{2, 4, 6, 8\}$</u></p>	<p>C</p>  <p>Domain: <u>$\{1, 2, 3, 4, 5, 6\}$</u></p> <p>Range: <u>$\{-1, 0, 1, 2, 3, 5, 6\}$</u></p>
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Essential Standard (8.F.B.5): I can describe a function and analyze the graph.

6.



Match the following stories to the graphs above. Write the letter of the graph to the corresponding description.

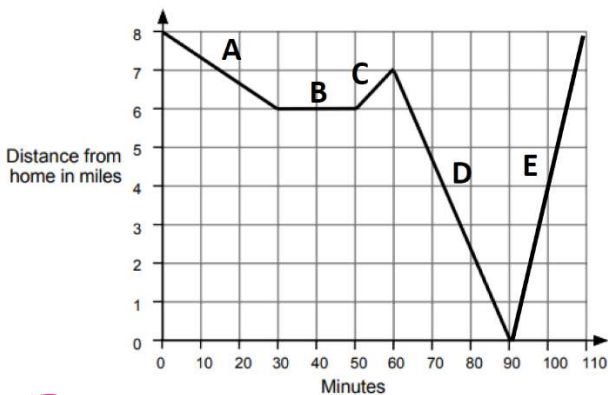
- K** a. Bob was getting cold outside and decided to start a campfire to warm up. When Bob was done he poured a bucket of water on the fire to put it out.
- J** b. Patrick took a marshmallow out of the kitchen and walked outside to roast it on the campfire. Then Patrick let it cool off for awhile and ate it.
- L** c. Sandy went swimming in the lake but got colder and colder. Then Sandy decided to warm up by sitting by the campfire.

Match each story with the appropriate letter graph. Circle your answer.

7. Mr. Wilson asked his class to sketch a graph that would represent the following activity: Start 3m away from me and slowly walk away for 8 seconds. Then stand still for 3 seconds and then walk quickly toward me for 4

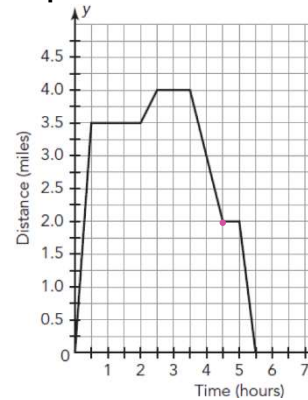


8. The graph shows the path that Tanner took from the library. Match each segment with the statement that it corresponds to.



- D** Tanner bikes home.
- A** Tanner leaves the library and heads toward home.
- B** Tanner rides his bike to the library.
- B** Tanner stops at 7-11 for a Slurpee.
- C** Tanner starts to ride toward the library, but realizes that he forgot something at home.

9. Ben biked from his house to several locations in town. The graph represents the distance from home in hours.



- a. How far from his house was Ben after $4\frac{1}{2}$ hours?
2 miles
- b. How fast did Ben bike during the first $\frac{1}{2}$ hour?
 $\frac{3.5 \text{ mi}}{0.5 \text{ h}} = 7 \text{ mph}$
- c. How fast did Ben bike from 2 to $2\frac{1}{2}$ hours?
 $\frac{0.5 \text{ mi}}{0.5 \text{ h}} = 1 \text{ mph}$
- d. How many miles did Ben bike from...
2 to $2\frac{1}{2}$ hours? **0.5 mi** $3\frac{1}{2}$ to $4\frac{1}{2}$ hours? **2 mi**

Essential Standard (8.F.A.2): I can compare functions represented in different ways.

10. Charlotte is comparing two different country clubs: Club Northwest and Club Southeast. Each company's costs are shown in the graph and the table to the right.

a. What is the cost per month of each club?

Club Northwest: 50 per month

Club Southeast: 40 per month.

b. Which club has a lower cost after 8 months?

Club southeast

By how much?

\$ 20

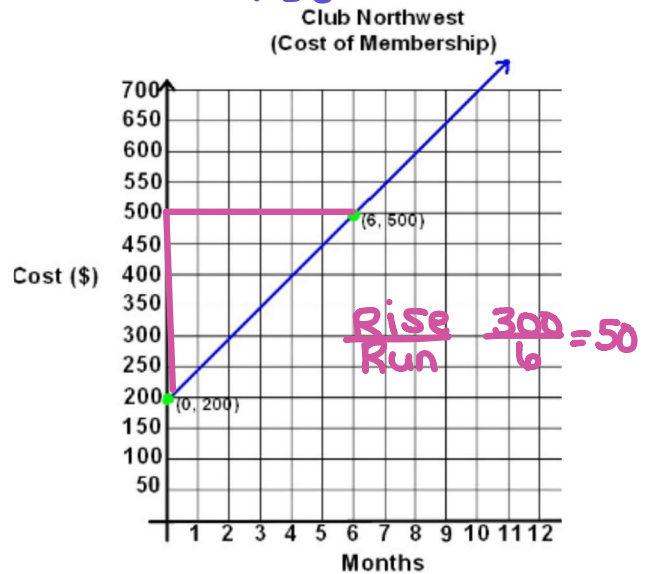
c. Which company has a higher sign-up fee? (cost at 0 months)

Northwest: \$200

southwest: \$260

$+2$ $\frac{y}{x} = \frac{80}{2} = 40$

Club Southeast				
Months (x)	1	3	6	8
Cost (\$) (y)	300	380	500	580

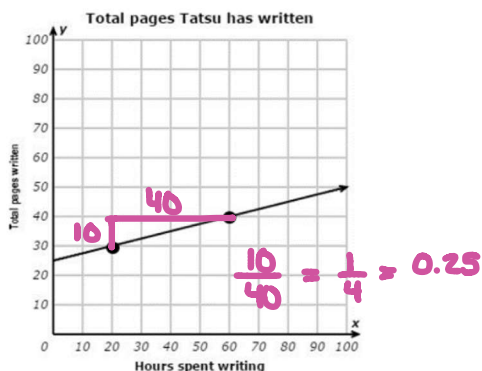


11. Tatsu and Marin are each writing a book. The equation $p=0.4h + 15$ represents Marin's rate of writing pages, where p =pages written, and h = hours spent writing.

The equation below represents Marin's writing rate.

$$p=0.4h + 15$$

The graph below represents Tatsu's writing rate.



Who wrote at a faster rate? Marin

12. Roxy and Ellie sell tickets to the Super Bowl. They start selling tickets at the same time. Roxy's rate of selling can be shown by the equation $t=5m+500$ where t =tickets sold and m =minutes sold.

Roxy's rate: $t=5m+500$

• starting amount

Ellie's rate:

x	y
0	600
4	612
8	624
12	636

$4 <$ > 12

$\frac{12}{4} = 3$

Circle one to make the statement true.

a. Roxy's rate of selling tickets is **greater than/ less than / same as** Ellie's rate of selling tickets.

b. Roxy's amount of tickets she starts with is **greater than/ less than/ same as** Ellie's amount of tickets she started with.

NAME _____ DATE _____ PERIOD: A B C D E F