Math 8 Unit 4 Functions Summative Assessment (On-level)   NAME:_____
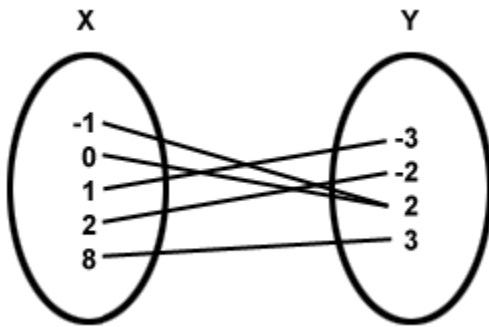
1. Which relation below is a function? **(MCC.8.F.1)**

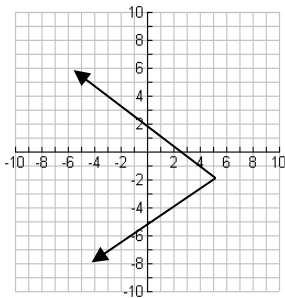a. {(1, 2), (3, 5), (3, 8), (4, 9)}

b. {(-1, 3), (0, 7), (3, 7), (6, 6)}

c. {(2, 1), (2, 2), (2, 3), (2, 4)}
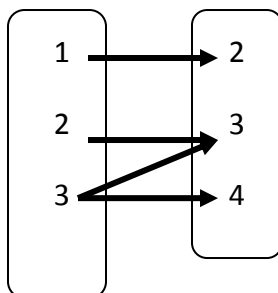
d. {(-8, 3), (3, -8), (5, 10), (5, 8)}

2. Tell whether the relation is a function. Explain why or why not. If the relation is not a function, provide a counterexample. **(MCC.8.F.1)**

3. Tell whether the relation is a function. Explain why or why not. If the relation is not a function, provide a counterexample. **(MCC.8.F.1)**

4. Tell whether the relation is a function. Explain why or why not. If the relation is not a function, provide a counterexample. **(MCC.8.F.1)**

5. Tell whether the relation is a function. Explain why or why not. If the relation is not a function, provide a counterexample. **(MCC.8.F.1)**

$$y = 3x + 2$$

6. Tell whether the relation is a function. Explain your yes or no answer. If the relation is not a function, provide a counterexample. **(MCC.8.F.1)**

$$x^2 + y^2 = 9$$

In problems 7-9 determine which function has a greater rate of change. Justify your answer. (MCC.8.F.2)

7.   **Function 1: y = 3x + 5**   **Function 2 : y = 5x + 3**
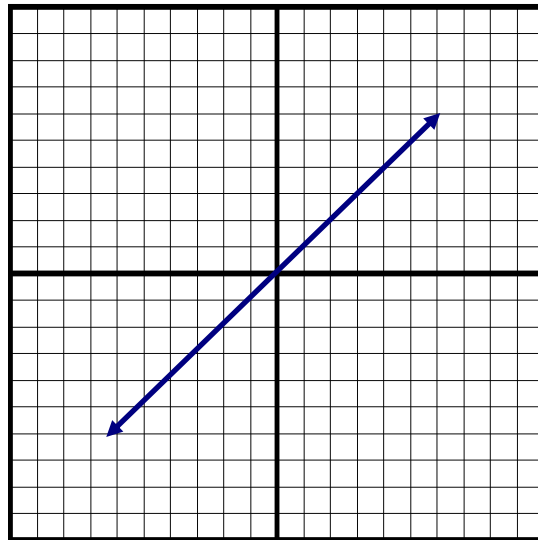
8.   **Function 1: (2, 2) (3, 3) (4, 4) (5, 5)**   **Function 2: y = x + 1**

9.   **Function 1:**   **Function 2:**

x	y
-1	6
0	3
1	0
2	-3

10. Which of the following is a function? **Justify your answer. (MCC.8.F.1)**

A.

x	1	1	2
y	2	3	4

B.

x	2	1	2
y	2	3	4

C.

x	1	2	3
y	3	3	3

D.

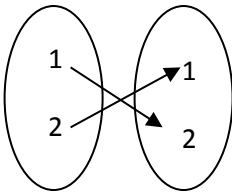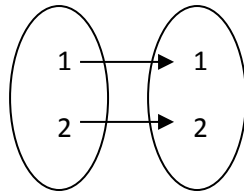| x	1	1	1
y	2	3	4

11. Which mapping diagram is **<u>not a function</u>**? **Justify your answer**. **(MCC.8.F.1)**
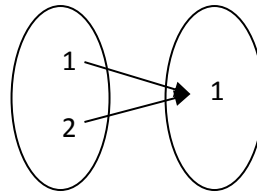
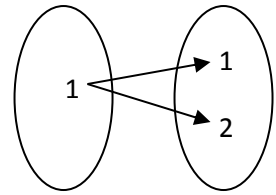A.   B.   C.   D.
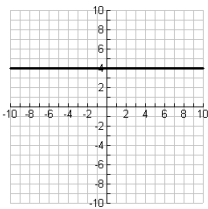

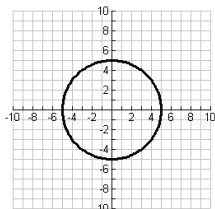12. Which Graph is a function? **Justify your answer. (MCC.8.F.1)**
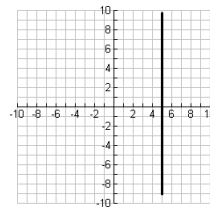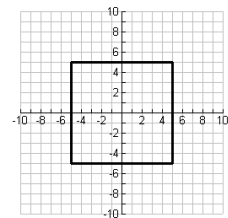
a.   B.   C.   D.

13. Which equation is **<u>not a function</u>**? **Justify your answer. (MCC.8.F.1)**
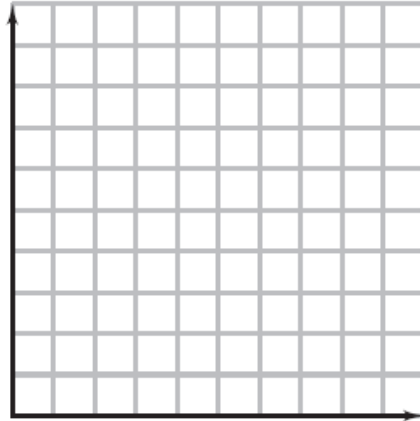
A.   B.   C.   D.

$$y = x - 3 \qquad y = x^2 + 4 \qquad y = -3 \qquad x = 5$$

14. For each of the following situations, create a table and a graph to model the relationship. Then describe the situation as increasing or decreasing, and linear or nonlinear.
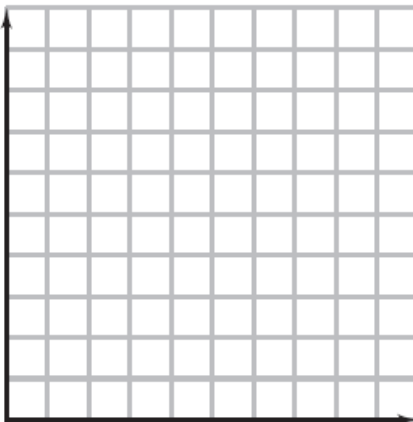
    a.   Mike has $25. He saves $11 each week.

x	y
0	
1	
2	
3	
4	

    b. Nettie has $2. She doubles her money each week.

x	y
0	
1	
2	
3	
4	

    c. Paul has $100. He spends $5 each day.

x	y
0	
1	
2	
3	
4	
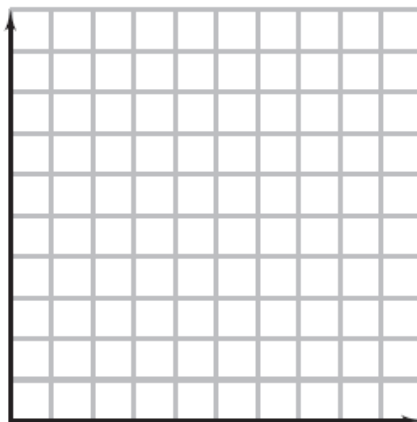
For each of the following problems, complete the other representations for the situation.
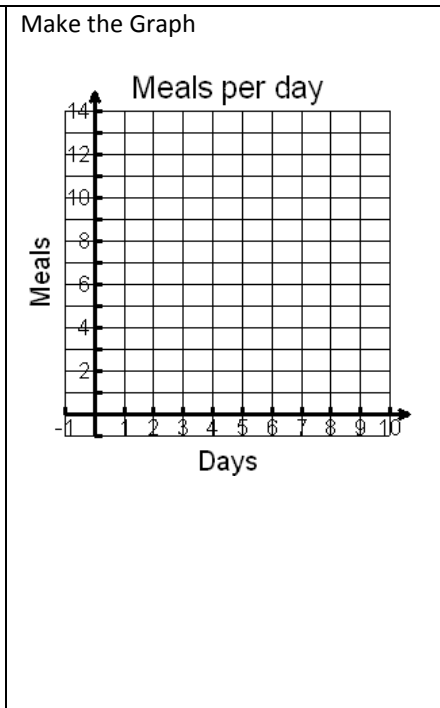
16. Table	Make the Graph	17. Fill in the table	Graph
	Meals per day		**Reading Aloud**
x (days) y(meals)		x ( ) y( )	
0 0			
1 3			
2 6			
3 9			
4 12			
What is the rate of change (slope)? What is the start point?(constant) What is the equation?	What is the story	What is the rate of change (slope)? What is the start point?(constant) What is the equation?	What is the story?
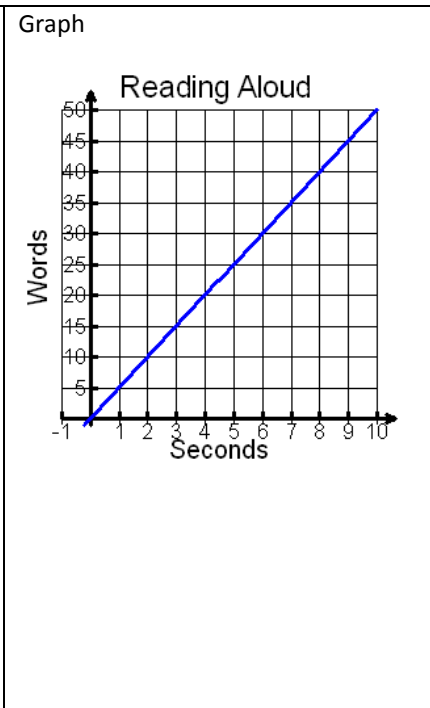
Graph 16 (Meals per day): Y-axis labeled "Meals" (0 to 14), X-axis labeled "Days" (-1 to 10).

Graph 17 (Reading Aloud): Y-axis labeled "Words" (0 to 50), X-axis labeled "Seconds" (-1 to 10).