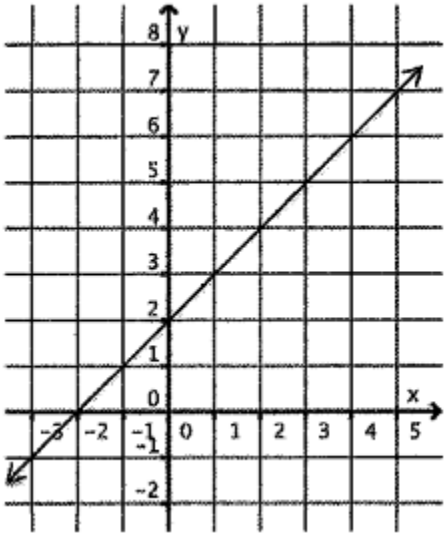
8th grade Math FSQ T4 Preview Name: _____

1. Consider the functions represented by the graph and the table shown below.




| x | 0 | 1 | 2 | 3 |
|---|---|---|---|---|
| y | 2 | 5 | 8 | 11 |

Which statement is **true** of these functions?

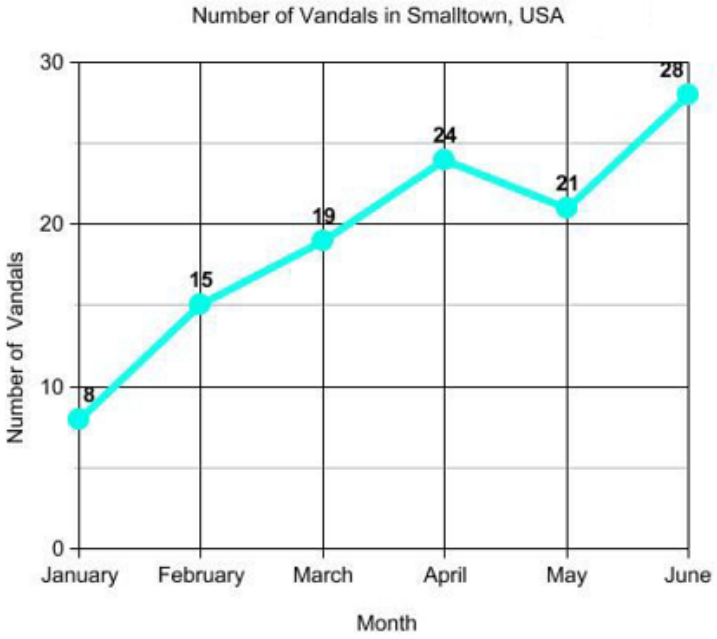
A. The rate of change of the function in the graph is less than that of the function in the table by 3 units.
B. The rate of change of the function in the graph is greater than that of the function in the table by 3 units.
C. The rate of change of the function in the graph is less than that of the function in the table by 2 units.
D. The rate of change of the function in the graph is greater than that of the function in the table by 2 units.

2. Brenda is selling popcorn at the basketball game. The basketball coach paid $5.00 for a box of popcorn kernels that will make 30 bags of popcorn. Brenda will sell the bags of popcorn for $1.00 each. What is the relationship between the amount of popcorn sold and the amount of money earned?

A. The relationship is linear.
B. The relationship is non-linear.
C. The relationship always results in a negative profit.
D. The relationship always results in a positive profit.
E. The relationship is proportional.
F. The relationship is non-proportional.

3. Jean Pierre is renting a kayak at Okeechobee Park. The rental charges include a fixed charge of $7 and an additional cost of $4.50 per hour. Which equation represents the total rental charges for the kayak, K, if Jean Pierre rents it for h hours?
   A. K = 7h + 4.50
   B. K = 7h – 4.50
   C. K = 4.50h – 7
   D. K = 4.50h + 7

4. Every month a town tracks the number of vandalisms that occur. The graph below shows the data for the first part of the year.



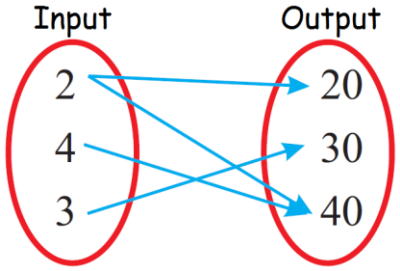

Which statement is true of Smalltown's data?

   A. From May to June there was a greater increase in vandalism than from January to February.
   B. The month of May had the greatest decrease in vandalism.
   C. The month of May had the least number of incidents of vandalism.
   D. Vandalism in the first part of the year increases at a constant rate.

5. Select all of the following sets of ordered pairs that are not functions.

A. (0, 4), (1, 5), (2, 6), (2, 10)
B. (5, -2), (7, -4), (9, -6), (11, -8)
C. (1, -5), (2, -5), (3, -5), (4, -5)
D. (10, 10), (8, 8), (6, 6), (4, 4)
E. (3, 0), (3, -1), (3, -2), (3, -3)

6. The mapping diagram defines a relation.




Which of the following best explains why this relation is NOT a function?

A. The inputs 2 and 4 both map to the output 40.
B. The output 40 came from two different inputs.
C. There are only three inputs.
D. One input is mapped to two different outputs.

7. Which equation represents a function that is nonlinear?

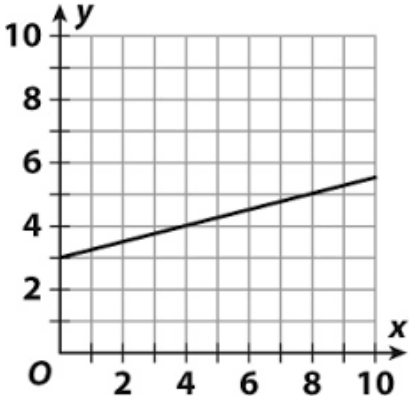
A. $y = \frac{-1}{5}x - 17$

B. $y = -8$

C. $y = 4x^2 + 25$

D. $y = 6x + 1.5$

8. This graph represents a function.




What are the rate of change and the initial value of the function represented by the graph?

A. The rate of change is $\frac{1}{4}$ and the initial value is 3.
B. The rate of change is 3 and the initial value is $\frac{1}{4}$.
C. The rate of change is 4 and the initial value is 3.
D. The rate of change is 3 and the initial value is 4