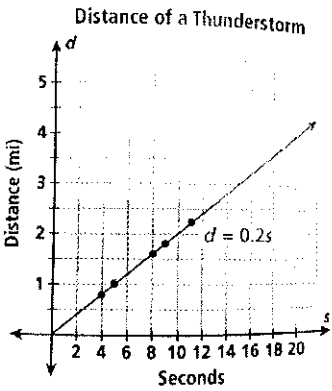


### Unit 3: Linear Functions Part 2

1 The graph represents the distance in miles of a town from the thunderstorm given the number of seconds between lightening flash and hearing thunder.



a) Given that the rate of change is 0.2, what does that mean in context?

IT TAKES .2 SECONDS FOR THE THUNDER TO MOVE 1 MILE

b) Is the relationship proportional? How do you know?

c) Assuming the graph continues at the same rate, how far away is a town if the number of seconds is 50?

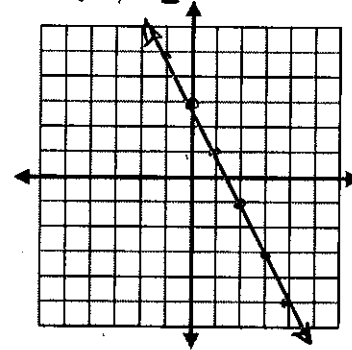
$.2 \cdot 50 = 10$  MILES

2 Show the linear function  $y = -2x + 3$  in the following three ways:

a) create a table

x	$-2x + 3$	y
-2	$-2(-2) + 3$	7
-1	$-2(-1) + 3$	5
0	$-2(0) + 3$	3
1	$-2(1) + 3$	1
2	$-2(2) + 3$	-1

b) create a graph



c) create a visual pattern or life situation that could be modeled by the equation.

Input	4	-2	3	4	0	5	-7
Output	2	-7	5	2	1	8	-12

a) Does the table represent a function?

INPUT IS X OUTPUT IS Y

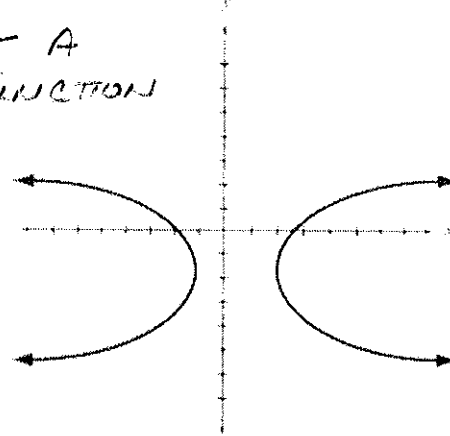
NO

b) How do you know?

IT IS NOT A FUNCTION BECAUSE 4 IS TWICE AS AN INPUT

4 Is the graph below a linear function, a non-linear function, or not a function?

NOT A FUNCTION



How do you know?

DID NOT PASS VERTICAL LINE TEST, 2 VALUES FOR X

5 Solve:

$$16 - 5(3m - 4) = 8(-2m + 11)$$

$$16 - 15m + 20 = -16m + 88$$

$$36 - 15m = -16m + 88$$

$$+16m \quad +16m$$


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$$36 + m = 88$$

$$-33 \quad -33$$


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$$m = 52$$

6 Create a number for each:

a) a rational number that lies between 6 and  $\sqrt{64}$

$$6 < \frac{134}{16} < 8$$

b) a rational number that repeats

$$7.\overline{5}$$

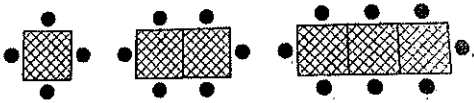
c) an irrational number that lies between 0 and 7

$$\pi$$

d) a rational number that terminates

$$2.15$$

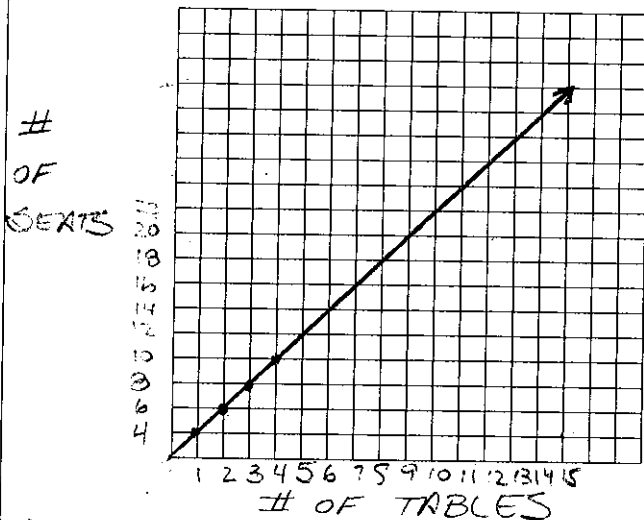
7 A square table has one seat on each side. Square tables are pushed together to make banquet tables, allowing more people to eat.



a) Complete the table:

number of tables	number of seats
1	4
2	6
3	8
4	10

b) Create a graph for the situation.



c) Using the slope from the graph, predict the number of seats if 15 tables are used.

$$32$$

8 Patricia and Marques each have a summer job. The amount of money they have earned so far for each week is shown in the tables.

Patricia		Marques	
week	\$	week	\$
1	4	1	5
2	7.3	2	8
3	11.4	3	11
4	16.5	4	14
5	22.4	5	17
6	29.7	6	20

a) Are either of them earning money at a linear rate? If yes, who?

YES MARQUES

b) Explain your answers from part (a).