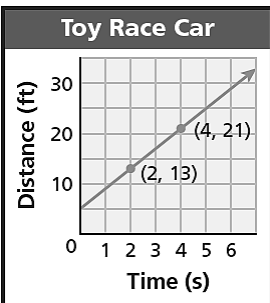


Unit 3: Linear Functions Part 1

1 The graph below shows a relationship.

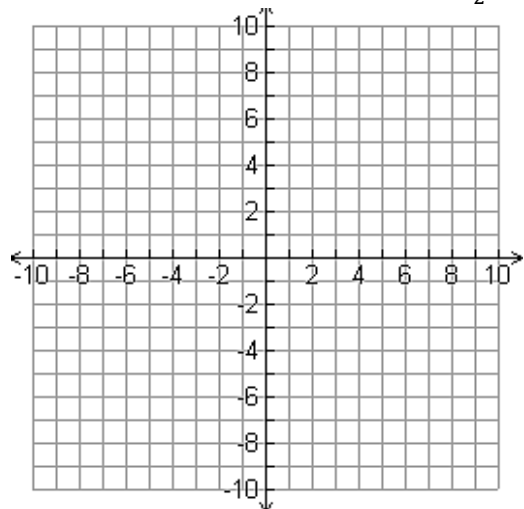


a) Create a verbal description of the relationship.

b) Is the relationship a linear function? How do you know?

c) How many solutions are there for the relationship? How do you know?

2 Graph the solutions to the equation $y = \frac{3}{2}x - 4$.



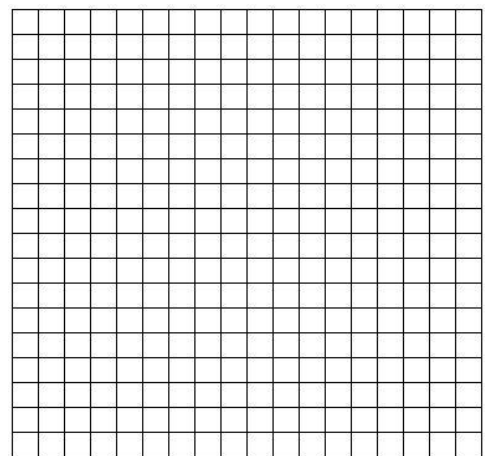
a) how do you know by looking at the equation that the relationship is linear?

b) how do you know by looking at the graph that the relationship is linear?

3 A hot air balloon rose from a height of 100 meters to 400 meters in 3 minutes. What was the balloon's rate of change?

4 A student's grade fell from a 96 to a 60 over 3 weeks because they slacked off and stopped doing their work.

a) Create a properly labeled graph for this situation.



b) Using the graph, what is the rate of change?

5 Solve:

$$3(x + 2) = 2 + 3x$$

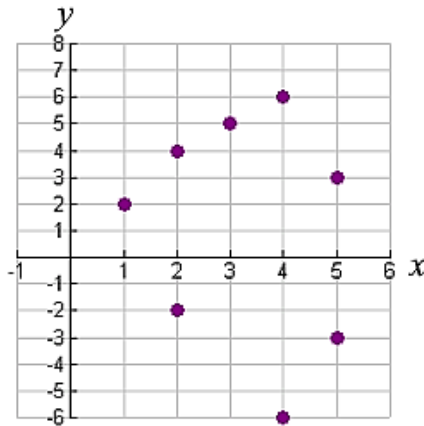
6 What kind of number is

0.12345678909898765432101234 ...?

How do you know?

7 The graph below shows a relation.

a) Which point(s) need to be changed in order to make this relation a linear function?



b) Draw your changes from part (a) on the graph.

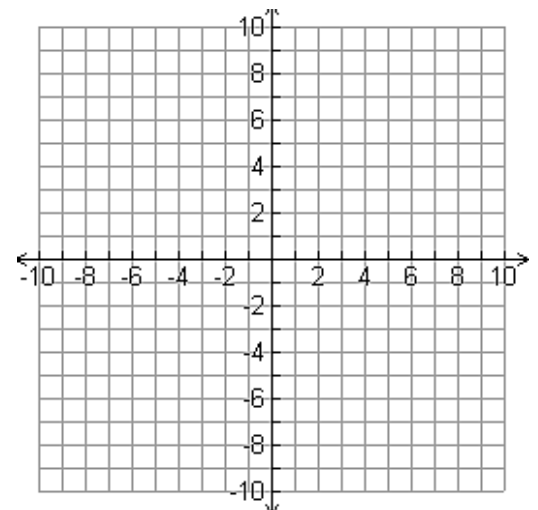
8 Over the summer you work walking dogs around your neighborhood. You decide to charge a flat fee for the service, and then an additional rate per dog that you walk. If you walk 5 dogs, you earn \$18.00. If you walk 2 dogs, you earn \$9.00.

number of dogs	money earned
2	9
5	18

a) complete the chart.

b) create an equation for this situation.

c) graph the situation.



d) where is it appropriate to include arrows for this graph?