

# Graphing Proportional Relationships

When a proportional relationship is graphed, it will always form a \_\_\_\_\_, and it will always pass through the \_\_\_\_\_ of the graph (0,0)

In other words: proportional relationships are linear, and pass through the origin (0, 0).

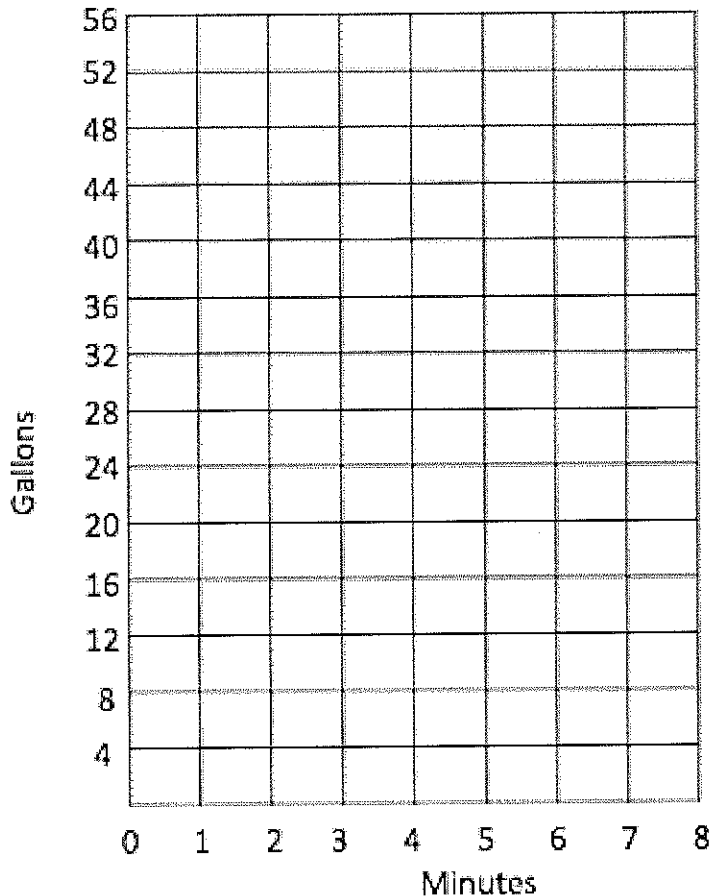
I.) Mark is filling his new pool with water. The table below shows the average amount of water (gallons) that fill the pool in a given number of minutes:

Minutes (m)	0	1	2	3	4	5
Gallons of water (g)	0	12	24	36	48	60

A) Use two ordered pairs to create a proportion to show that this is a **proportional relationship**.

B) What is the constant of proportionality?  
What does that mean?

C) Write an equation to show the relationship between minutes passed (m) and gallons filled (g)



D) Graph the data on the graph to the left. Mark the constant of proportionality with a star.

E) Does the graph show a proportional relationship (direct variation)? How do you know? (Give two pieces of evidence)

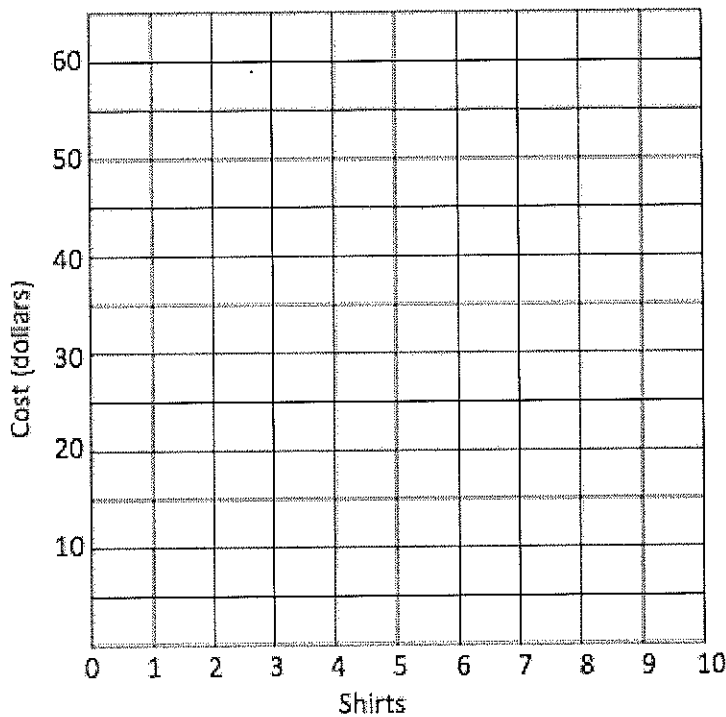
II.) The table shows the cost of buying Mathletes t-shirts to wear to the next competition.

# of shirts	0	2	4	6	8	10
total cost	0	11.00	22.00	33.00	44.00	55.00

A) Use two ordered pairs to create a proportion to show that this is a **proportional relationship**.

B) What is the constant of proportionality?  
What does that mean?

C) Write an equation to show the relationship between number of shirts bought (s) and price (p)



D) Graph the data on the graph to the left. Mark the constant of proportionality with a star.

E.) Does the cost of shirts vary directly with the number of shirts purchased?  
Give two pieces of evidence.

III. Determine whether each graph is proportional. If it is proportional, give the constant of proportionality.

