

Lesson 5: Identifying Proportional and Non-Proportional Relationships in Graphs

Classwork

Opening Exercise

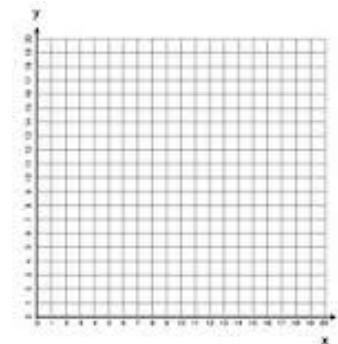
Isaiah sold candy bars to help raise money for his scouting troop. The table shows the amount of candy he sold to the money he received.

Is the amount of candy bars sold proportional to the money Isaiah received? How do you know?

| x Candy Bars Sold | y Money Received (\$) |
|------------------------|----------------------------|
| 2 | 3 |
| 4 | 5 |
| 8 | 9 |
| 12 | 12 |

Example 1: From a Table to Graph

| x | y |
|-----|-----|
| 2 | 3 |
| | |
| | |
| | |

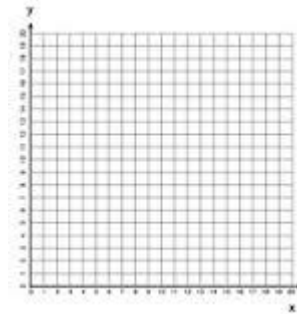


Important Note:

Characteristics of graphs of proportional relationships:

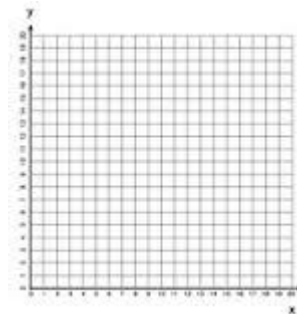
Example 2

| x | y |
|-----|-----|
| 2 | 3 |
| 4 | 6 |
| 8 | 12 |
| 12 | 14 |



Example 3

| x | y |
|-----|-----|
| 0 | 6 |
| 3 | 9 |
| 6 | 12 |
| 9 | 15 |
| 12 | 18 |



Similarities with Example 1:

Differences from Example 1:

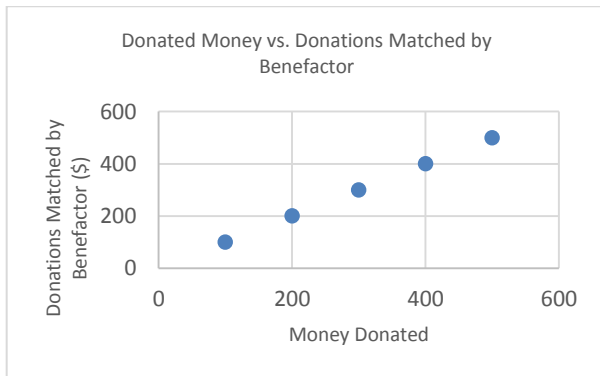
Lesson Summary:

When two proportional quantities are graphed on a coordinate plane, the points lie on a straight line that passes through the origin.

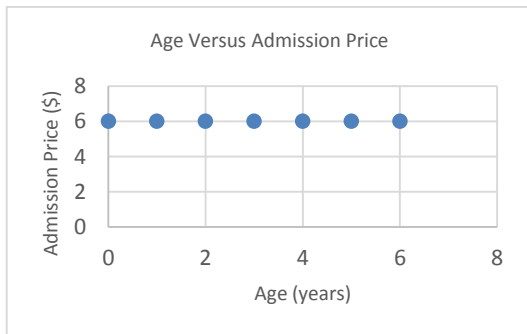
Problem Set

- Determine whether or not the following graphs represent two quantities that are proportional to each other. Give reasoning.

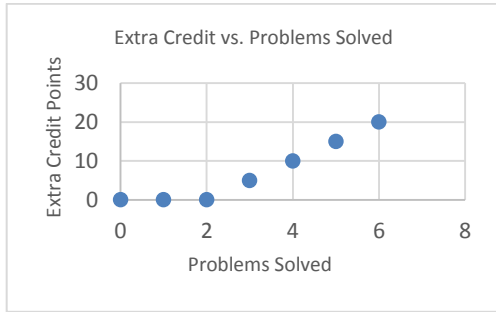
a.



b.



c.



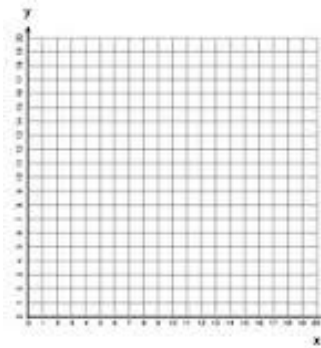
2. Create a table and a graph for the ratios 2:22, 3 to 15 and 1/11. Does the graph show that the two quantities are proportional to each other? Explain why or why not.

| x | y |
|-----|-----|
| | |
| | |
| | |

3. Graph the following tables and identify if the two quantities are proportional to each other on the graph.

a.

| x | y |
|-----|-----|
| 3 | 1 |
| 6 | 2 |
| 9 | 3 |
| 12 | 4 |



b.

| x | y |
|-----|-----|
| 1 | 4 |
| 2 | 5 |
| 3 | 6 |
| 4 | 7 |

