

The Gadget Factory sells all kinds of electronic gadgets.

1. The Gadget Factory just received a shipment.

Part A

Complete the chart.

Item	Number of Items per Box	Number of Boxes per Carton	Number of Items per Carton	Cost per Item	Cost per Box	Cost per Carton
Magnet	25		300		\$66.25	\$795.00
Binoculars	16	19	304	\$17.68		\$5,374.72
Flash Drive		18	540	\$14.99	\$449.70	

Part B

The manager of The Gadget Factory wants to make sure that the next shipment costs no more than \$15,000. Write an inequality that shows the amount of money that can be spent. Graph the inequality on the number line. Let n = the amount of money spent.

Part C

Mo wrote and solved the equation below to find the cost per magnet.

$$66.25w = 795$$
$$w = 12$$

Is Mo correct? Explain.

2. Mr. Hart owns a model train store. He uses magnets from The Gadget Factory for the train tracks.

Part A

The table shows the relationship between the number of train tracks, t , and the number of magnets needed, m .

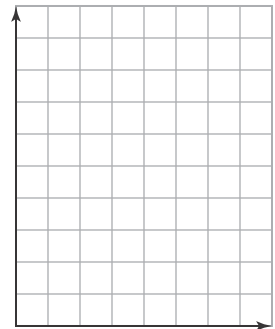
t	m
1	5
2	8
3	11
4	14
5	17

Describe the relationship between the number of tracks and the number of magnets needed. Then write an equation that models this relationship.

Equation: _____

Part B

Complete and label the graph to show the relationship between the number of magnets and the number of tracks.



Part C

Mr. Hart would like to increase the number of tracks to 6. Extend the graph. What ordered pair represents the number of magnets, m , when there are 6 tracks? How many magnets will Mr. Hart need?

3. The speed of passenger trains is increasing more and more with the introduction of electromagnetics. Conduct research on speeds of the fastest trains during the past 50 years. Graph the speeds of trains on a time line and determine whether there is a relationship between the year a train was developed and its speed.