1.4 Using the Walkathon Money
Recognizing Linear Relationships

In previous Problems, you noticed that, as the independent variable changes by a constant amount, there is a pattern of change in the dependent variable. You can use this pattern of change to identify other linear relationships.

Ms. Chang's class decides to use their money from the walkathon to provide books for the children's ward at the hospital. The class puts the money in the school safe and withdraws a fixed amount each week to buy new books. To keep track of the money, Isabella makes a table of the amount of money in the account at the end of each week.

Week	Amount of Money at the End of Each Week
0	$144
1	$132
2	$120
3	$108
4	$96
5	$84

- What do you think the graph of this data would look like?

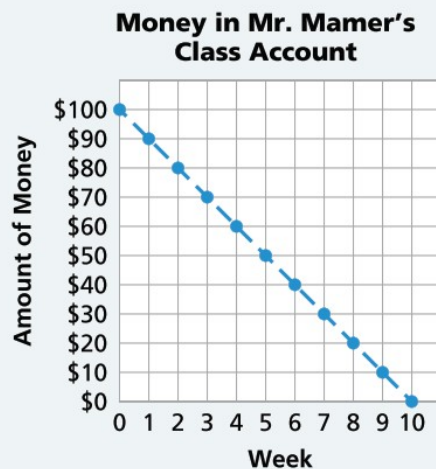- Does this table represent a linear relationship? How did you decide?

Problem 1.4

A
1. How much money is in the account at the start of the project? Explain.

2. How much money is withdrawn from the account each week?

3. Suppose the students continue withdrawing the same amount of money each week. Sketch a graph of this relationship.

4. Write an equation that represents the relationship. Explain what information each number and variable represents.

5. Is the relationship between the number of weeks and the amount of money left in the account linear? Explain.

Problem **1.4**   *continued*

B Mr. Mamer's class also raised money from the walkathon. They use the money to buy games and puzzles for the children's ward. Keenan uses a graph to keep track of the amount of money in the account at the end of each week.

Money in Mr. Mamer's Class Account

1. What information does the graph represent about the money in Mr. Mamer's class account?

2. Make a table of data for the first 10 weeks. Explain why this table represents a linear relationship.

3. Write the equation that models the linear relationship. Explain what information each number and variable represents.

C 1. How can you determine whether a relationship is linear from a graph, a table, or an equation?

2. Compare the patterns of change for the linear relationships in this Problem to those in previous Problems in this Investigation.

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