



Changing the Starting Point

Walking for Charity

Ms. Porter's class decides to participate in a walkathon to raise money for a local hospital. Each participant in the walkathon must find sponsors to pledge a certain amount of money for each mile the participant walks.

Ms. Porter says that some sponsors might ask the students to suggest a pledge amount. The class wants to agree on how much they will ask for. Leanne says that \$1 per mile would be appropriate. Miguel says that \$2 per mile would be better because it would bring in more money. Alan points out that if they ask for too much money, not as many people will want to be sponsors. He suggests that they ask each sponsor for a \$5 donation plus \$0.50 per mile.

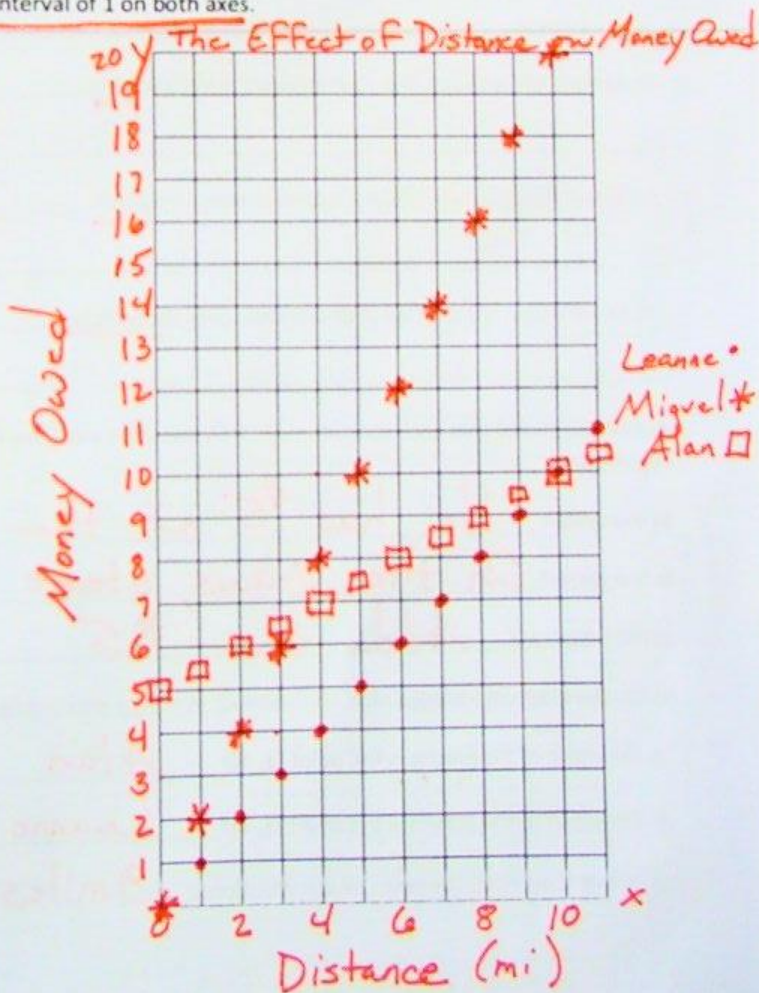
In this problem, we will refer to Leanne, Miguel, and Alan's suggestions as pledge plans.

1) a. How much would a sponsor owe for each student if they walked 6 miles? (show your calculations)

Leanne: $6 \cdot 1 = \$6$ Miguel: $6 \cdot 2 = \$12$ Alan: $0.5(6) + 5 = \$8$

b. Make a table and a graph showing the amount of money a sponsor would owe under each pledge plan if a student walked distances between 0 and 10 miles. Use an interval of 1 on both axes.

Distance (miles)	Money Owed		
	Leanne	Miguel	Alan
0	0	0	5
1	1	2	5.50
2	2	4	6
3	3	6	6.50
4	4	8	7
5	5	10	7.50
6	6	12	8
7	7	14	8.50
8	8	16	9
9	9	18	9.50
10	10	20	10



c. For each pledge plan, write an equation that can be used to calculate the amount of money a sponsor owes, given the total distance the student walks. (You may look back at your calculations in #1,a to help write the equations.)

Define your variables: Amount Owed = a Distance Walked = d

Leanne: $a = 1d$ Miguel: $a = 2d$ Alan: $a = 0.5d + 5$

2) a. What effect does the amount pledged per mile (rate) have on the table? Keep adding the rate as the distance increases by 1.

b. What effect does the amount pledged per mile (rate) have on the graphs? the rate changes the steepness

c. What effect does the amount pledged per mile (rate) have on the equations? multiply the rate by the distance

3) a. If a student walks 8 miles in the walkathon, how much does a sponsor owe under each pledge plan?

Leanne: _____ Miguel: _____ Alan: _____

b. Explain how you can find your answers using the table. _____

c. Explain how you can find your answers using the graph. _____

d. Explain how you can find your answers using the equation. _____

4) Alan suggested that each sponsor make a \$5 donation and then pledge \$0.50 per mile. How is this fixed \$5 donation represented...

In the table? He has \$5 at the start, at zero miles.

In the graph? On the y-axis, start at 5.

In the equation? Add the \$5

5) On the graph of a pledge plan, the point (2, 6) means that a student who walks 2 miles earns \$6 from each sponsor.

a. On which of the graphs is the point (2, 6)? Alan

b. On which of the graphs is the point (3, 3)? Leanne Explain what the

coordinates mean in reference to the situation. 3 miles walked earns \$3

c. On which of the graphs is the point (4, 8)? _____ Explain what the coordinates mean in reference to the situation. _____

d. On which of the graphs is the point (4, 7)? _____ Explain what the coordinates mean in reference to the situation. _____

6) a. Write an equation for a pledge plan whose graph is a steeper line than any of the lines you graphed in the problem.

Equation of a steeper line: _____

b. Write an equation for a pledge plan whose graph is less steep than any of the lines you graphed in the problem.

Equation of a less steep line: _____

7) Complete each of the following tables of input-output values. As the x-values increase by 1, describe the pattern for the y-values.

a. $y = 2x + 1$



x	-3	-2	-1	0	1	2
y	-5	-3	-1	1	3	5

Pattern

Add 2

b. $y = 2x + 3$



x	-3	-2	-1	0	1	2
y						

c. $y = -2x + 5$



x	-3	-2	-1	0	1	2
y						

d. $y = \frac{1}{2}x + 5$



x	-3	-2	-1	0	1	2
y						

e. $y = \frac{1}{3}x + 6$



x	-3	-2	-1	0	1	2
y						

8) Refer to the equations in #7 and the pattern in the table. What do you notice about the coefficient of x in the equations and the pattern stated? _____

