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.

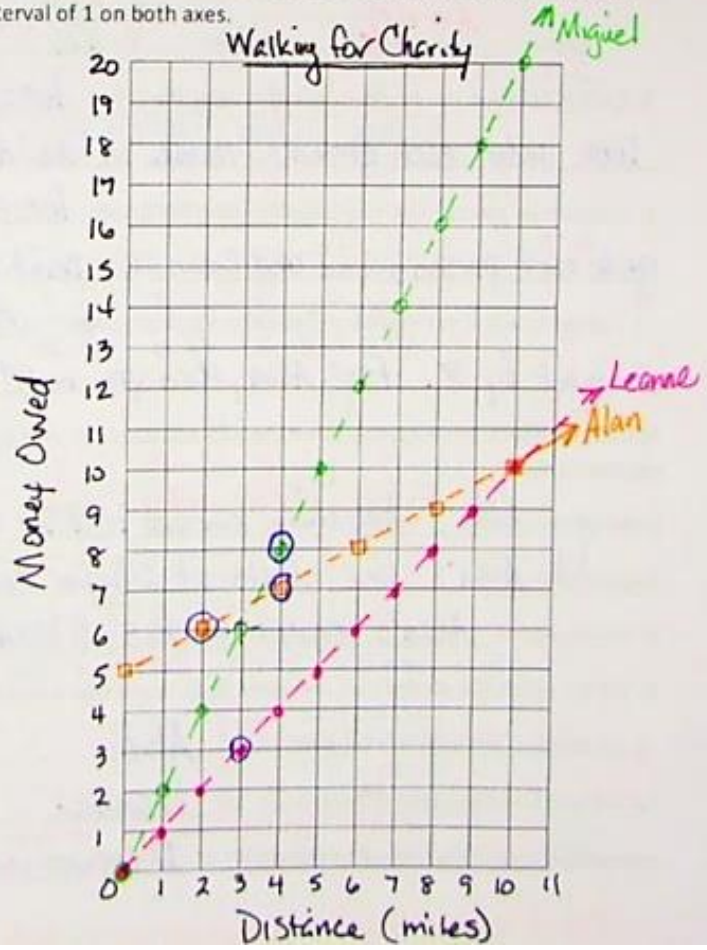
In this problem, we will refer to Leanne, Miguel, and Alan's suggestions as pledge plans.

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

Leanne: $1(6)$ \$6 Miguel: $2(6)$ \$12 Alan: $5+\frac{3}{6}(6)$ \$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 $1m$	Miguel $2m$	Alan $5+\frac{1}{2}m$
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 = m

Leanne: A = 1m Miguel: A = 2m Alan: A = 5 + ½m

2) a. What effect does the amount pledged per mile (rate) have on the table? the total amount increases by the amount pledged for each person

b. What effect does the amount pledged per mile (rate) have on the graphs? the amount pledged determines the steepness of the line for each person

c. What effect does the amount pledged per mile (rate) have on the equations? the amount pledged is the number multiplied by the number of miles walked

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

Leanne: A = 1(8) $8 Miguel: A = 2(8) $16 Alan: A = 5 + ½(8) $9

b. Explain how you can find your answers using the table. locate 8 mi in the first column, then look under each person's name in the Amount Owed column for that

c. Explain how you can find your answers using the graph. locate 8 mi on the x-axis (# of miles), then go to each person's line and from that point go left to the y-axis (Amount Owed)

d. Explain how you can find your answers using theequation. Multiply each person's pledge amount by 8. For Alan, then you must add 5.

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? Alan's beginning amount is $5 - the others are zero

In the graph? Alan's line starts at a higher amount - the others begin at zero

In the equation? Alan's equation has 5 added - the others have nothing added

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. If Leanne walks 3 miles, the amount owed is $3