For Exercises 3–5, Jose, Mario, Melanie, Mike, and Alicia are on a weeklong cycling trip. The table below gives the distance Jose, Mario, and Melanie each travel for the first 3 hours. Cycling times include only biking time, not time to eat, rest, and so on.

Cycling Distance

Cycling Time (hours)	Distance (miles)		
	Jose	Mario	Melanie
0	0	0	0
1	5	7	9
2	10	14	18
3	15	21	27

3. **a.** Assume that each person cycles at a constant rate. Find the rate at which each person travels during the first 3 hours. Explain.

b. Find the distance each person travels in 7 hours.

c. Graph the time and distance data for all three riders on the same coordinate axes.

d. Use the graphs to find the distance each person travels in $6\frac{1}{2}$ hours.

e. Use the graphs to find the time it takes each person to travel 70 miles.

f. How does the rate at which each person rides affect each graph?

g. For each rider, write an equation that can be used to calculate the distance traveled after a given number of hours.

h. Use your equations from part (g) to calculate the distance each person travels in $6\frac{1}{2}$ hours.

i. How does a person's cycling rate show up in his or her equation?

j. Are any of these proportional relationships? If so, what is the constant of proportionality?

4. Mike makes the following table of the distances he travels during the first day of the trip.

a. Suppose Mike continues riding at this rate. Write an equation for the distance Mike travels after t hours.

b. Sketch a graph of the equation. How did you choose the range of values for the time axis? For the distance axis?

c. How can you find the distances Mike travels in 7 hours and in $9\frac{1}{2}$ hours, using the table? Using the graph? Using the equation?

d. How can you find the numbers of hours it takes Mike to travel 100 miles and 237 miles, using the table? Using the graph? Using the equation?

e. For parts (c) and (d), what are the advantages and disadvantages of using each model—a table, a graph, and an equation—to find the answers?

Cycling Distance

Time (hours)	Distance (miles)
0	0
1	6.5
2	13
3	19.5
4	26
5	32.5
6	39

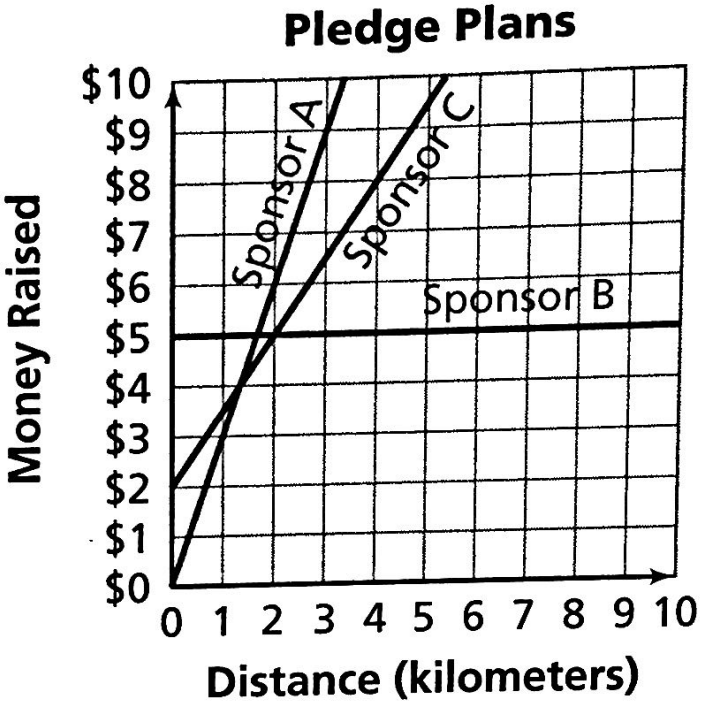
f. Compare the rate at which Mike rides with the rates at which Jose, Mario, and Melanie ride. Who rides the fastest? How can you determine this from the tables? From the graphs? From the equations?

5. The distance in miles Alicia travels in t hours is represented by the equation $d = 7.5t$.

a. At what rate does Alicia travel? Explain.

b. Suppose the graph of Alicia's distance and time is put on the same set of axes as Mike's, Jose's, Mario's, and Melanie's graphs. Where would it be located in relationship to each of the graphs? Describe the location without actually making the graph.

6. The graph below represents the walkathon pledge plans for three sponsors.



a. Describe each sponsor's pledge plan.

b. What is the number of dollars per kilometer each sponsor pledges?

c. What does the point where the line crosses the y-axis mean for each sponsor?

d. Write the coordinates of two points on each line. What information does each point represent for the sponsor's pledge plan?

e. Does each relationship represent a proportional relationship?

12. Jamal's parents give him money to spend at camp. Jamal spends the same amount of money on snacks each day. The table below shows the amount of money, in dollars, he has left at the end of each day.

Snack Money

Days	0	1	2	3	4	5	6
Money Left	$20	$18	$16	$14	$12	$10	$8

a. How much money does Jamal have at the start of camp? Explain.

b. How much money does he spend each day? Explain.

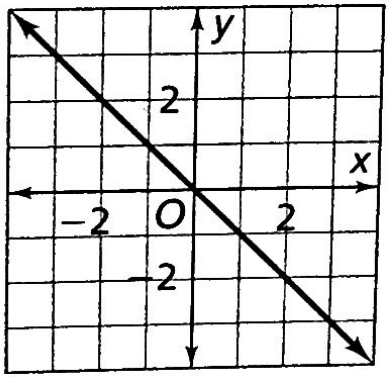
c. Is the relationship between the number of days and the amount of money left in Jamal's wallet a linear relationship? Explain.

d. Assume that Jamal's spending pattern continues. Check your answer to part (c) by sketching a graph of this relationship.

e. Write an equation that represents the relationship. Explain what information the numbers and variables represent.

13. Write an equation for each graph.

Graph 1



Graph 2