Applications

1. Hoshi walks 10 meters in 3 seconds.
   a. What is her walking rate?
   b. At this rate, how long does it take her to walk 100 meters?
   c. Suppose she walks this same rate for 50 seconds. How far does she walk?
   d. Write an equation that represents the distance d that Hoshi walks in t seconds.

2. Milo walks 40 meters in 15 seconds and Mira walks 30 meters in 10 seconds. Whose walking rate is faster?

In Exercises 3–5, Jose, Mario, Melanie, Mike, and Alicia are on a weeklong cycling trip. Cycling times include only biking time, not time to eat, rest, and so on.

3. The table below gives the distance Jose, Mario, and Melanie travel for the first 3 hours. Assume that each person cycles at a constant rate.

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

   a. Find the average 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.

Due May 7, 2008

4. Examine the patterns in each table.

Table 1

x	y
−2	3
−1	3
0	3
1	3
2	3

Table 2

x	y
−3	9
−2	4
−1	1
0	0
1	1

Table 3

x	y
0	10
3	19
5	25
10	40
12	46

Table 4

x	y
0	−3
2	−6
4	−9
6	−12
8	−15

[redacted]

b. Explain how you can use the tables to decide if the data represent a linear relationship.

[redacted]

d. Write an equation for each linear relationship. Explain what information the numbers and variables represent in the relationship.

5. Fill in the missing numbers to make each sentence true.

a. $15 \times (6 + 4) = (15 \times \_\_) + (15 \times 4)$

b. $2 \times (x + 6) = (2 \times \_\_) + (\_\_ \times 6)$

c. $(x \times 2) + (x \times 6) = \_\_ \times (2 + 6)$