

LESSON
7-2

Writing and Graphing Equations in the Form $y = mx + b$

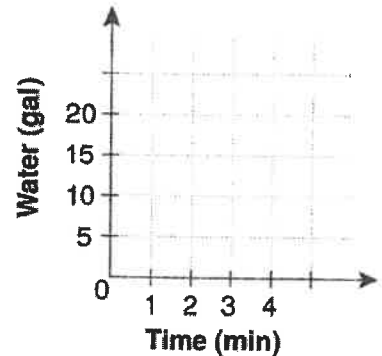
Practice and Problem Solving: A/B

Use the description below and the graph at the right for Exercises 1–4.

A tank contains 5 gallons of water. Joanna uses a hose to slowly add more water to the tank. Five gallons of water are added to the tank every minute.

- Write an equation to describe the relationship between the number of gallons in the tank and the number of minutes the tank is being filled.

- On the grid at the right, graph the linear relationship.
- Does it make sense to draw a line through the points? Explain.



- Suppose there had been no water in the tank. How would the graph change?

For Exercises 5–7, write an equation to represent the given linear relationship. Then state the meaning of the given ordered pair.

- Renting bowling shoes costs \$5. Bowling costs \$4 per game. (3, 17)

- William started with 40 photographs. He took 8 more photographs each day. (6, 88)

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| | | | | | |
|----------------------|---------|---------|----------|----------|----------|
| Monthly Sales | 0 | \$5,000 | \$10,000 | \$15,000 | \$20,000 |
| Earnings | \$2,000 | \$2,500 | \$3,000 | \$3,500 | \$4,000 |

(\$50,000, \$7,000)

LESSON
7-1

Linear Relationships in the Form $y = mx + b$
Practice and Problem Solving: A/B

Solve.

1. When Mack babysits, he charges \$8 an hour plus bus fare. The amount Mack is paid depends on the number of hours he babysits.
 - a. If Mack babysits for 1 hour and the bus fare is \$2.50, how much will Mack be paid? _____
 - b. If Mack babysits for 4 hours and the bus fare is \$2.50, how much will Mack be paid? _____
 - c. The bus fare for one job is \$2.50. In the table below, show the relationship between the number of hours Mack babysits and the amount he gets paid.

| | | | | | |
|------------------------|--|--|--|--|--|
| Number of Hours | | | | | |
| Amount Paid | | | | | |

2. A pipe is draining water from a tank. The table below shows the time in minutes and the number of gallons remaining in the tank.

| | | | | | |
|-----------------------------|-----|-----|-----|-----|-----|
| Time (min) | 5 | 10 | 15 | 20 | 25 |
| Amount in Tank (gal) | 300 | 260 | 220 | 180 | 140 |

- a. How many gallons drain from the tank in 5 minutes? _____
- b. Based on your answer to Exercise 2a, how many gallons will drain from the tub in one-half hour? _____
- c. Give a verbal description of the relationship between the number of minutes and the amount of water in the tank.

- d. Based on the information in the table, how many gallons of water were in the tank before the draining started? _____
- e. Based on the information in the table, how long will it take to empty all the water from the tank? _____