

## Section 1 Word Problems

- **SPORTS** For Exercises 1-3, use the table that shows the leading home run and runs batted in totals in the American League for 1996–2000.

Year	1996	1997	1998	1999	2000
HR	52	56	56	48	47
RBI	148	147	157	165	145

Source: *The World Almanac*

1. Make a graph of the data with home runs on the horizontal axis and runs batted in on the vertical axis.
2. Identify the domain and range.
3. Does the graph represent a function? Explain your reasoning.

**FINANCE** For Exercises 4-7, use the table that shows a company's stock price in recent years.

4. Write a relation to represent the data.
5. Graph the relation.
6. Identify the domain and range.
7. Is the relation a function? Explain your reasoning.

Year	Price
1997	\$39
1998	\$43
1999	\$48
2000	\$55
2001	\$61
2002	\$52

**FUND-RAISING** For Exercises 8-11, use the following information.

The Jackson Band Boosters sell beverages for \$1.75 and candy for \$1.50 at home games. Their goal is to have total sales of \$525 for each game.

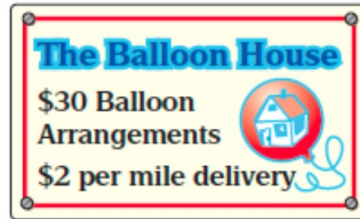
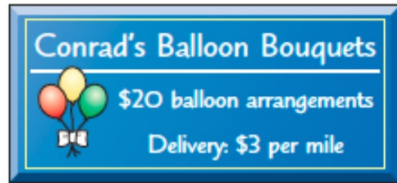
8. Write an equation that is a model for the different numbers of beverages and candy that can be sold to meet the goal.
9. Graph the equation.
10. Does this equation represent a function? Explain.
11. If they sell 100 beverages and 200 pieces of candy, will the Band Boosters meet their goal?

**GEOMETRY** For Exercises 12-14, use the equation  $d = 180(c - 2)$  that gives the total number of degrees  $d$  in any convex polygon with  $c$  sides.

12. Write this equation in slope-intercept form.
13. Identify the slope and  $d$ -intercept.
14. Find the number of degrees in a pentagon.

15. **ECOLOGY** A park ranger at Blendon Woods estimates there are 6000 deer in the park. She also estimates that the population will increase by 75 deer each year thereafter. Write an equation that represents how many deer will be in the park in  $x$  years.

16. **BUSINESS** Refer to the signs below. At what distance do the two stores charge the same amount for a balloon arrangement?



### Science

Ice forms at a temperature of  $0^{\circ}\text{C}$ , which corresponds to a temperature of  $32^{\circ}\text{F}$ . A temperature of  $100^{\circ}\text{C}$  corresponds to a temperature of  $212^{\circ}\text{F}$ .

- **SCIENCE** For Exercises 17 - 19, use the information on temperatures at the left.

17. Write and graph the linear equation that gives the number  $y$  of degrees Fahrenheit in terms of the number  $x$  of degrees Celsius.
18. What temperature corresponds to  $20^{\circ}\text{C}$ ?
19. What temperature is the same on both scales?

- **TELEPHONES** For Exercises 20 and 21, use the following information.

Namid is examining the calling card portion of his phone bill. A 4-minute call at the night rate cost \$2.65. A 10-minute call at the night rate cost \$4.75.

20. Write a linear equation to model this situation.
21. How much would it cost to talk for half an hour at the night rate?
22. **CRITICAL THINKING** Given  $\triangle ABC$  with vertices  $A(-6, -8)$ ,  $B(6, 4)$ , and  $C(-6, 10)$ , write an equation of the line containing the altitude from  $A$ . (*Hint:* The altitude from  $A$  is a segment that is perpendicular to  $\overline{BC}$ .)