

**2-2**

**Practice**  
**Linear Equations**

State whether each equation or function is linear. Write *yes* or *no*. If no, explain your reasoning.

1.  $h(x) = 23$

2.  $y = \frac{2}{3}x$

3.  $y = \frac{5}{x}$

4.  $9 - 5xy = 2$

Write each equation in standard form. Identify *A*, *B*, and *C*.

5.  $y = 7x - 5$

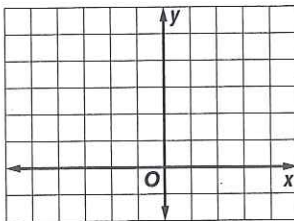
6.  $y = \frac{3}{8}x + 5$

7.  $3y - 5 = 0$

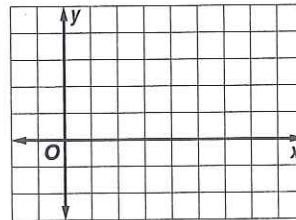
8.  $x = -\frac{2}{7}y + \frac{3}{4}$

Find the *x*-intercept and the *y*-intercept of the graph of each equation. Then graph the equation.

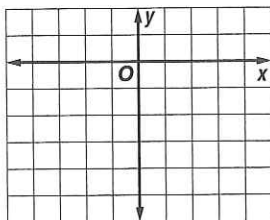
9.  $y = 2x + 4$



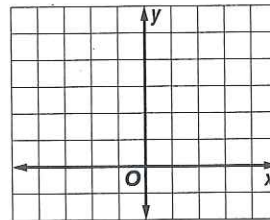
10.  $2x + 7y = 14$



11.  $y = -2x - 4$



12.  $6x + 2y = 6$



**13. MEASURE** The equation  $y = 2.54x$  gives the length in centimeters corresponding to a length  $x$  in inches. What is the length in centimeters of a 1-foot ruler?

**LONG DISTANCE** For Exercises 14 and 15, use the following information.

For Meg's long-distance calling plan, the monthly cost  $C$  in dollars is given by the linear function  $C(t) = 6 + 0.05t$ , where  $t$  is the number of minutes talked.

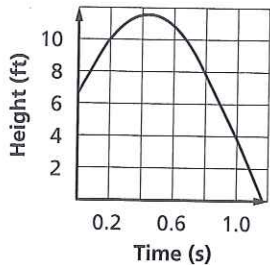
14. What is the total cost of talking 8 hours? of talking 20 hours?

15. What is the effective cost per minute (the total cost divided by the number of minutes talked) of talking 8 hours? of talking 20 hours?

**2-2****Word Problem Practice****Linear Equations**

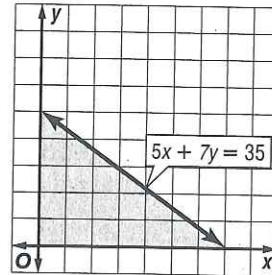
1. **WORK RATE** The linear equation  $n = 10t$  describes  $n$ , the number of origami boxes that Holly can fold in  $t$  hours. How many boxes can Holly fold in 3 hours?

2. **BASKETBALL** Tony tossed a basketball. Below is a graph showing the height of the basketball as a function of time. Is this the graph of a linear function? Explain.



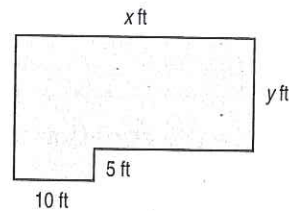
3. **PROFIT** Paul charges people \$25 to test the air quality in their homes. The device he uses to test air quality cost him \$500. Write an equation that describes Paul's net profit as a function of the number of clients he gets. How many clients does he need to break even?

4. **RAMP** A ramp is described by the equation  $5x + 7y = 35$ . What is the area of the shaded region?



- SWIMMING POOL** For Exercises 5–7, use the following information.

A swimming pool is shaped as shown below. The total perimeter is 110 feet.



5. Write an equation that relates  $x$  and  $y$ .
6. Write the linear equation from Exercise 5 in standard form.
7. Graph the equation.

