NAME _____ DATE _____ PERIOD _____

2-2 Skills Practice
Linear Relations and Functions

State whether each function is a linear function. Explain.

1. $y = 3x$

2. $y = -2 + 5x$

3. $2x + y = 10$

4. $f(x) = 4x^2$

5. $-\frac{3}{x} + y = 15$

6. $x = y + 8$

7. $g(x) = 8$

8. $h(x) = \sqrt{x} + 3$

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

9. $y = x$

10. $y = 5x + 1$

11. $2x = 4 - 7y$

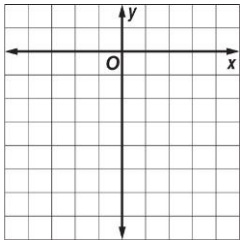
12. $3x = -2y - 2$

13. $5y - 9 = 0$

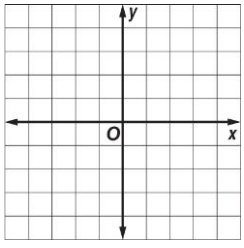
14. $-6y + 14 = 8x$

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

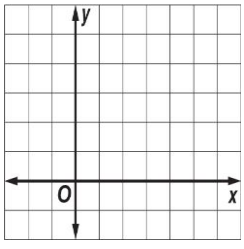
15. $y = 3x - 6$



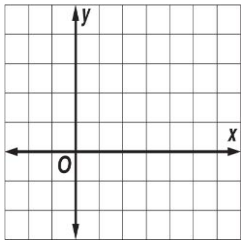
16. $y = -2x$



17. $x + y = 5$



18. $2x + 5y = 10$



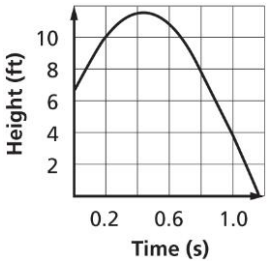
NAME _____ DATE _____ PERIOD _____

2-2 Word Problem Practice

Linear Relations and Functions

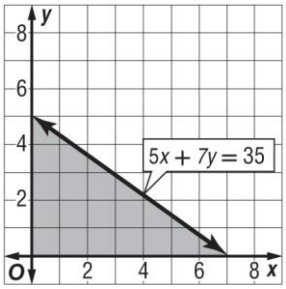
1. WORK RATE The linear equation $n = 10t$ describes n, the number of origami boxes that Holly can fold in t hours. How many boxes can Holly fold in 3 hours?

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.

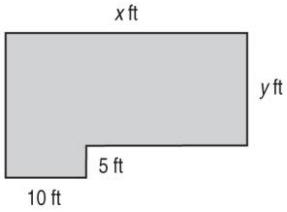


3. PROFIT Paul charges people $25 to test the air quality in their homes. The device he uses to test air quality cost him $500. Write an equation that describes Paul's net profit as a function of the number of clients he gets. How many clients does he need to break even?

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



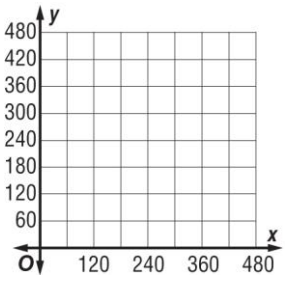
5. SWIMMING POOL A swimming pool is shaped as shown below. The total perimeter is 500 feet.



a. Write an equation that relates x and y.

b. Write the linear equation from part **a** in standard form.

c. Graph the equation.



d. Olympic swimming pools are 164 feet long. If this pool is an Olympic pool, what is the value of y?