3-1 Practice

Graphing Linear Equations

Determine whether each equation is a linear equation. Write yes or no. If yes, write the equation in standard form and determine the x- and y-intercepts.

1. $4xy + 2y = 9$
2. $8x - 3y = 6 - 4x$
3. $7x + y + 3 = y$

4. $5 - 2y = 3x$
5. $\frac{x}{4} - \frac{y}{3} = 1$
6. $\frac{5}{x} - \frac{2}{y} = 7$

Graph each equation.

7. $\frac{1}{2}x - y = 2$
8. $5x - 2y = 7$
9. $1.5x + 3y = 9$

10. COMMUNICATIONS A telephone company charges $4.95 per month for long distance calls plus $0.05 per minute. The monthly cost $c$ of long distance calls can be described by the equation $c = 0.05m + 4.95$, where $m$ is the number of minutes.

   a. Find the y-intercept of the graph of the equation.

   b. Graph the equation.

   c. If you talk 140 minutes, what is the monthly cost?

11. MARINE BIOLOGY Killer whales usually swim at a rate of 3.2–9.7 kilometers per hour, though they can travel up to 48.4 kilometers per hour. Suppose a migrating killer whale is swimming at an average rate of 4.5 kilometers per hour. The distance $d$ the whale has traveled in $t$ hours can be predicted by the equation $d = 4.5t$.

   a. Graph the equation.

   b. Use the graph to predict the time it takes the killer whale to travel 30 kilometers.