Lesson 7 Practice Problems

1. Select **all** the equations that have graphs with the same y-intercept.

   A. $y = 3x - 8$

   B. $y = 3x - 9$

   C. $y = 3x + 8$

   D. $y = 5x - 8$

   E. $y = 2x - 8$

   F. $y = \frac{1}{3}x - 8$

2. Create a graph showing the equations $y = \frac{1}{4}x$ and $y = \frac{1}{4}x - 5$. Explain how the graphs are the same and how they are different.

3. A cable company charges $70 per month for cable service to existing customers.

   a. Find a linear equation representing the relationship between x, the number of months of service, and y, the total amount paid in dollars by an existing customer.

   b. For new customers, there is an additional one-time $100 service fee. Repeat the previous problem for new customers.

   c. When the two equations are graphed in the coordinate plane, how are they related to each other geometrically?

4. A mountain road is 5 miles long and gains elevation at a constant rate. After 2 miles, the elevation is 5500 feet above sea level. After 4 miles, the elevation is 6200 feet above sea level.

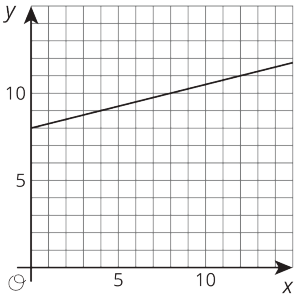
   a. Find the elevation of the road at the point where the road begins.

   b. Describe where you would see the point in part (a) on a graph where y represents the elevation in feet and x represents the distance along the road in miles.

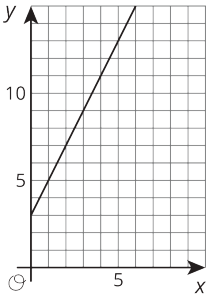
(From Unit 5, Lesson 5.)

5. Match each graph to a situation.

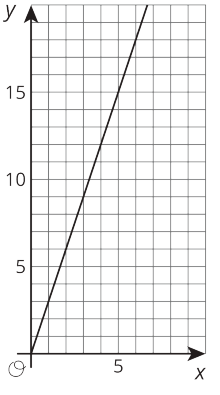
A



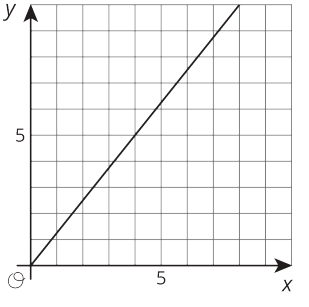
B



C



D



A. Graph A

B. Graph B

C. Graph C

D. Graph D

1. The graph represents the perimeter, y, in units, for an equilateral triangle with side length of x units. The slope of the line is 3.

2. The amount of money, y, in a cash box after x tickets are purchased for carnival games. The slope of the line is $\frac{1}{4}$.

3. The number of chapters read, y, after x days. The slope of the line is $\frac{5}{4}$.

4. The graph shows the cost in dollars, y, of a muffin delivery and the number of muffins, x, ordered. The slope of the line is 2.

(From Unit 5, Lesson 5.)