

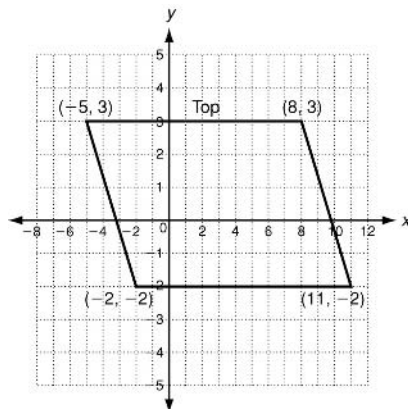
LESSON
18-1

Problem Solving

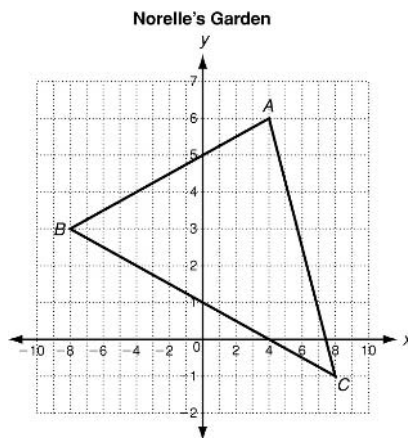
Slopes of Parallel and Perpendicular Lines

Write the correct answer.

1. Hamid is making a stained-glass window. He needs a piece of glass that is a perfect parallelogram. Hamid lays a piece of glass that he has cut on a coordinate grid. Show that the glass is in the shape of a parallelogram.



2. Norelle's garden is shown at right. Is her garden in the shape of a right triangle? Justify your answer.



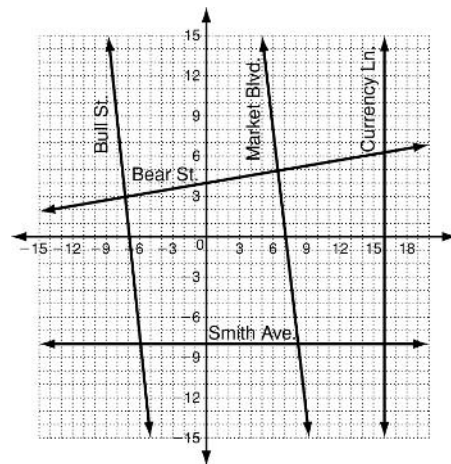
The graph shows a street map. Use it to answer questions 3–5.

3. The district plans to add Industrial Road next year. It will run perpendicular to Smith Ave. and pass through $(-14, 2)$. What equation will describe the location of Industrial Road?

- A $y = 14 - x$ C $y = -14$
 B $y = x - 14$ D $x = -14$

4. In two years, the business district plans to add Stock Street. It will run parallel to Market Blvd. and pass through $(-1, 5)$. What equation will describe the location of Stock Street?

- F $y = -7x + 12$ H $y = \frac{1}{7}x + \frac{34}{7}$
 G $y = -7x - 2$ J $y = \frac{1}{7}x + \frac{36}{7}$

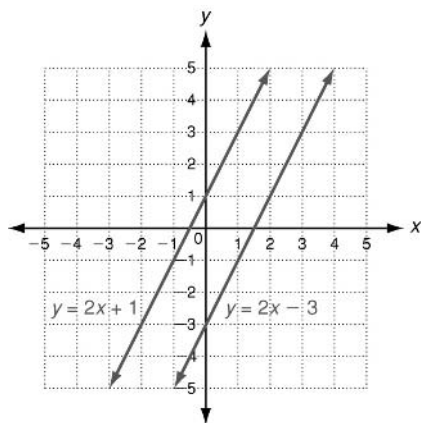


5. What is the slope of a street parallel to Bear Street?

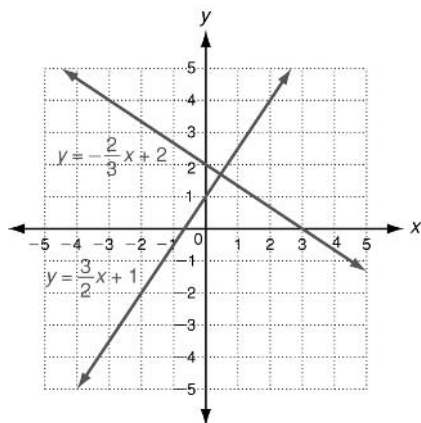
- A -7 C $\frac{1}{7}$
 B $-\frac{1}{7}$ D 7

Review for Mastery

1. $y = 2x + 1$; $y = 2x - 3$



2. $y = -\frac{2}{3}x + 2$; $y = \frac{3}{2}x + 1$



3. 6; $-\frac{1}{6}$

4. $\frac{4}{3}$; $-\frac{3}{4}$

5. $y = -x + 11$

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

Challenge

1. a. $y = 2x + 4$

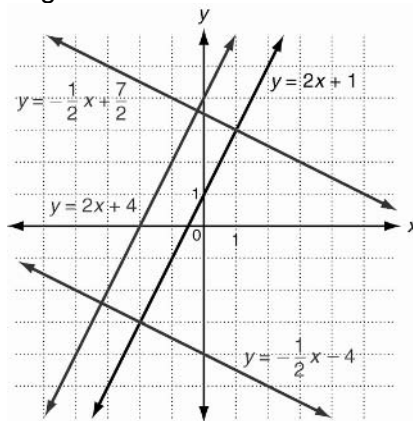
2. a. -3

b. $y = -\frac{1}{2}x - 4$

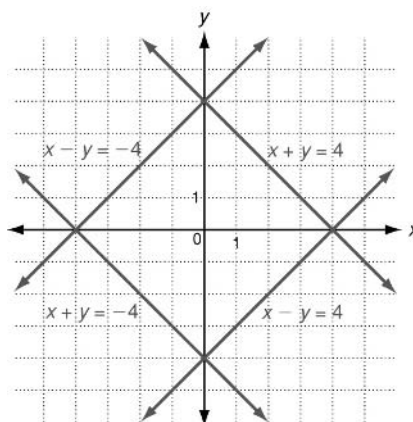
3. a. 3

b. $y = -\frac{1}{2}x + \frac{7}{2}$

4. It is a rectangle because it has four right angles.



5-6. $x - y = -4$; $x + y = -4$; $x - y = 4$; $x + y = 4$



Problem Solving

1. The top and bottom are parallel because they are both horizontal. The sides are parallel because they both have a slope of $-\frac{5}{3}$. It is a parallelogram because both pairs of opposite sides are parallel.

2. The slope of AB is $\frac{1}{4}$, the slope of AC is $-\frac{7}{4}$, and the slope of BC is $-\frac{1}{4}$. None of the slopes have a product of -1 so no sides are perpendicular.

3. D

4. G

5. C

Reading Strategies

Possible answers are given for 1 and 2.

1. $y = 3x + 3$

2. $y = -\frac{1}{3}x + 3$