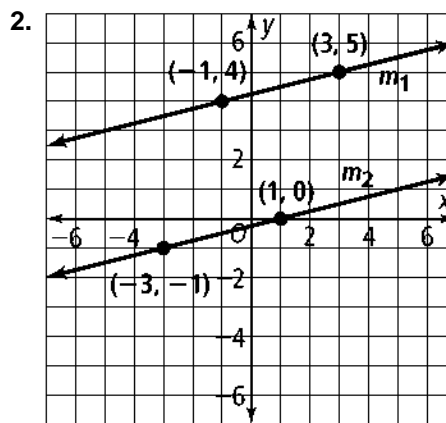
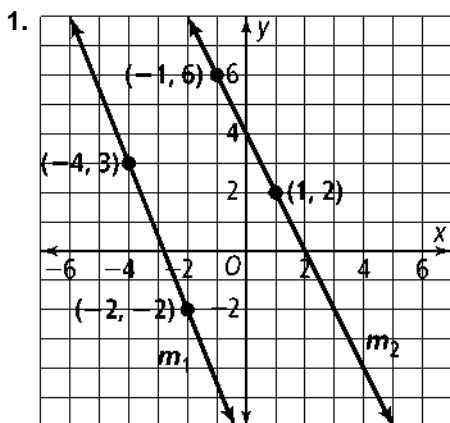


# 3-8 Practice

Form G

## Slopes of Parallel and Perpendicular Lines

In Exercises 1 and 2, are lines  $m_1$  and  $m_2$  parallel? Explain.



Write an equation of the line parallel to  $\overleftrightarrow{AB}$  that contains point C.

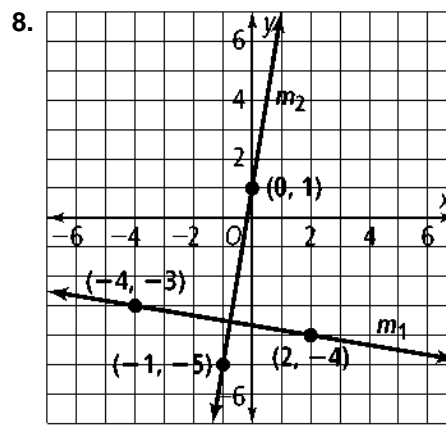
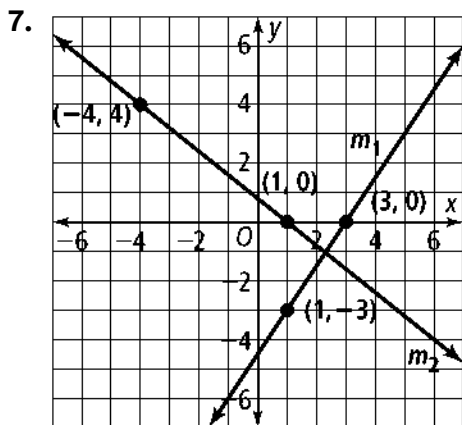
3.  $\overleftrightarrow{AB}: y = -5x + 12; C(-2, 1)$

4.  $\overleftrightarrow{AB}: y = \frac{4}{7}x + 7\frac{2}{7}; C(7, 1)$

5.  $\overleftrightarrow{AB}: y = \frac{1}{5}x + 8\frac{4}{5}; C(3, 6)$

6.  $\overleftrightarrow{AB}: y = -\frac{2}{5}x + 5\frac{2}{5}; C(5, -2)$

In Exercises 7 and 8, are lines  $m_1$  and  $m_2$  perpendicular? Explain.



Write an equation of the line perpendicular to the given line that contains P.

9.  $P(-6, 5); y = 2x - 3$

10.  $P(4, 3); y = -3x - 15$

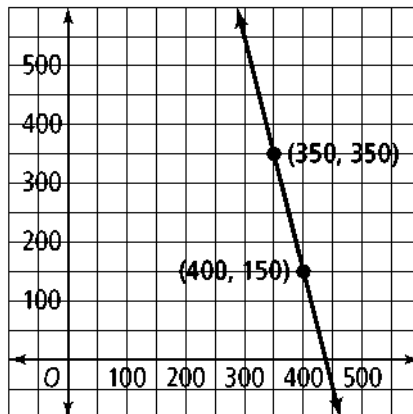
11.  $P(-6, -3); y = x - 1$

12.  $P(5, 5); y = \frac{7}{4}x + 11\frac{1}{2}$

# 3-8 Practice (continued) Form G

## Slopes of Parallel and Perpendicular Lines

- 13.** The line that represents the right boundary of a street is shown on the grid at the right.
- a.** What is the equation of the left boundary, which is parallel to the right boundary, and passes through point  $L(200, 100)$ ?
  - b.** Graph the left boundary.



**Rewrite each equation in slope intercept form. Then determine whether the lines are parallel. Explain.**

**14.**  $2y = x + 15$   
 $x = 2y + 5$

**15.**  $10y + 130 = 50x$   
 $-5y = 2x + 11$

**16.**  $2y = 15 + 4x$   
 $6y - 30 = 12x$

**Rewrite each equation in slope-intercept form. Then determine whether the lines are perpendicular. Explain.**

**17.**  $y - 1 = -x - 6$   
 $y - 3 = -\frac{5}{6}(x - 5)$

**18.**  $y - 6\frac{3}{4} = -\frac{1}{4}x$   
 $2y = 8x + 18$

**19.**  $y - 6 = -\frac{5}{2}(x + 4)$   
 $5y = 2x + 6$

- 20.** A town's building code states that stairs and ramps must have a handrail. The sketch at the right has a scale of 7 in. to each grid space.
- a.** The handrail needs to be at least 35 in. above the ramp. Mark the point 35 in. above the top of the ramp. What are its coordinates?
  - b.** What is the equation of the line for the handrail?

