

MTH 135 Supplement to Section 8.4

Recall: Two lines that are parallel have the same slope. ( $m_1 = m_2$ )

The slopes of perpendicular lines are negative reciprocals of each other.

$$(m_1 = \frac{-1}{m_2})$$

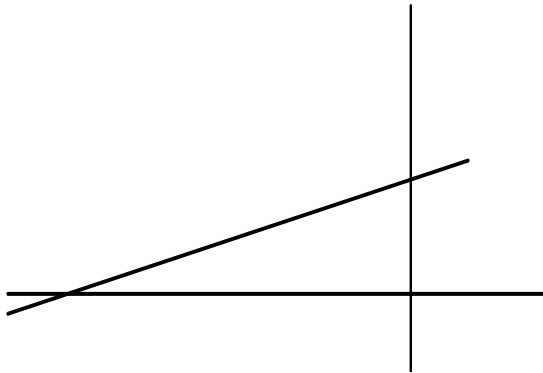
1. Find the equation of the line that goes through (7, 4) and (-2, 4).
2. Find the equation of the line that goes through (6, 2) and (3, -2).
3. Find the equation of the line that goes through (-2, 5) and (0,2).
4. Find the equation of the line that goes through (-3, 4) and (2, 2).
5. Find the equation of the line that goes through the point (2, -5) and is parallel to the line  $y = \frac{1}{3}x - 2$ .
6. Find the equation of the line that goes through the point (-2, -3) and is parallel to  $y = -x + 4$ .
7. Find the equation of the line that goes through the point (4, 0) and is perpendicular to the line  $3x + 4y = 7$ .

8. Find the equation of the line that goes through the point  $(4, 0)$  and is perpendicular to the line  $y = .5x + 1$ .

9. Find the equation of the line that goes through the point  $(3, 2)$  and is perpendicular to the  $x$ -axis.

10. Find the equation of the line that goes through the point  $(18, 7)$  and is perpendicular to  $5y + 2x = 10$ .

11. Write an equation of the line depicted in the following graph. It crosses the  $x$ -axis at  $-9$  and it crosses the  $y$ -axis at  $5$ .



12. Write the equation of the line that is perpendicular to the line in #11 and goes through the point  $(-2, 2)$ .

13. The taxi fare in Poduck is \$1.05 for the first  $\frac{1}{5}$  mile and \$0.10 for each additional  $\frac{1}{10}$  mile. How far can you travel on \$5?

14. For what value of  $c$  is  $x = 2$  a solution of the equation  $3c + x = 7x - 2c + 5$  ?
15. Terry leaves Lansing toward Indy at 2:00 P.M.. Mary leaves Indy toward Lansing at 2:30 P.M.. They are 250 miles apart to begin with. Terry averages 70 m.p.h. and Mary averages 55 m.p.h.. At the time that they cross each other how far have they each driven?
16. Find  $x$  if the area between the rectangles is 22 square inches. The dimensions of the larger rectangle are  $x + 3$  by  $x + 2$  inches. The dimensions of the inside rectangle are  $x$  by  $x + 1$  inches.

