

**Please do all your work on a separate piece of paper. Please show all setup and work!**

Plot the points and find the slope of the line passing through the pair of points.

1.  $(-3, 2), (1, 6)$
2.  $\left(\frac{11}{2}, \frac{-4}{3}\right), \left(\frac{-3}{2}, \frac{-1}{3}\right)$

Find the slope-intercept form of the equation of the line that passes through the given point and has the indicated slope.

3. Point:  $(0, -2)$  Slope: 3
4. Point:  $\left(4, \frac{5}{2}\right)$  Slope:  $\frac{4}{3}$
5. Point:  $(-10, 4)$  Slope: 0
6. Point:  $(6, -1)$  Slope: undefined

Find the slope-intercept form of the equation of the line passing through the points. Sketch a graph of the line.

7.  $(5, -1), (-5, 5)$
8.  $\left(\frac{-1}{10}, \frac{-3}{5}\right), \left(\frac{9}{10}, \frac{-9}{5}\right)$

Write the slope-intercept forms of the equations of the lines through the given point (a) parallel to the given line and (b) perpendicular to the given line.

9. Point:  $(2, 1)$  Line:  $4x - 2y = 3$
10. Point:  $\left(\frac{7}{8}, \frac{3}{4}\right)$  Line:  $5x + 3y = 0$

Word problem

11. You are driving on a road that has a 6% uphill grade. This means that the slope of the road is  $\frac{6}{100}$ . Approximate the amount of vertical change in your position if you drive 200 feet.
12. In 1996 there were 3927 J.C. Penney store and in 1997 there were 2981 stores. Write a linear equation that gives the number of stores in terms of the year. Let  $t = 0$  represent 1996. Then predict the numbers of stores for the years 1999 and 2000.