

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

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

1. Point: (0,10) Slope: -1
2. Point: $(\frac{-1}{2}, \frac{3}{2})$ Slope: -3
3. Point: (-1,5) Slope: 0
4. Point: (2,9) Slope: undefined

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

5. (-8,1), (-8,7)
6. (1,1), $(6, \frac{-2}{3})$

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.

7. Point: (-3,2) Line: $x + y = 7$
8. Point: (-1,0) Line: $y = -3$

Word problem

9. 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.
10. Express the Area A of an equilateral triangle as a function of the length s of its sides.

Evaluate the function at each specified value of the independent variable and simplify.

11. $f(x) = 2x - 3$
 - a. $f(1)$
 - b. $f(-3)$
 - c. $f(x - 1)$
12. $h(t) = t^2 - 2t$
 - a. $h(2)$
 - b. $h(1.5)$
 - c. $h(x + 2)$

Find all the real values of x such that $f(x) = 0$

13. $f(x) = 15 - 3x$
14. $f(x) = x^3 - x$

Find the values of x for which $f(x) = g(x)$

15. $f(x) = x^2$, $g(x) = x + 2$

Find the domain of the function.

16. $f(x) = 5x^2 + 2x - 1$
17. $g(x) = \frac{1}{x} - \frac{3}{x+2}$