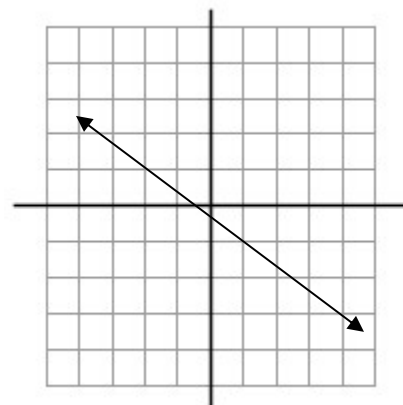


## Lines and Linear Equations Discussion Examples

Be able to determine slope of a line.

1. Find the slope of the line through  $(3,-4)$  and  $(7,2)$ .
2. Find the slope of the line through  $(0,3)$  and  $(-5,3)$ .
3. Find the slope of the line  $2y + 17 = 5$ .
4. Find the slope of the line  $12x - 3y = 10$
5. Find the slope of the line  $y = -\frac{2}{3}x + 4$
6. Find the slope of the line shown at the right.



Be able to graph a line (there are three main methods).

7. Use a t-chart with at least 5 points to graph  $3x - 2y = 8$ .
8. Use the point-slope method of graphing the line through  $(-2,0)$  having slope  $m = -\frac{1}{3}$ .
9. Use the x-and y-intercept method, along with a third check point to graph the line  $3x + y = 7$ .
10. Graph the line  $y = \frac{4}{3}x - 5$ .

Write equations for lines, including parallel and perpendicular lines.

11. Write an equation in slope-intercept form for the line containing  $(2,-3)$  and  $(-4,1)$ .
12. Write an equation in standard form for the line containing  $(3,-2)$  with slope  $m = -\frac{1}{4}$ .
13. Write an equation in standard form for the line through  $(-2,5)$  and parallel to the line  $-8x + 2y = 13$ .
14. Write an equation in standard form for the line through the origin and perpendicular to the line  $-2x + 3y = 7$ .
15. Write an equation for the perpendicular bisector of the line segment between  $(-7,1)$  and  $(-3,-3)$ .

Extend your knowledge and analytical abilities about lines.

16. Write an equation for the horizontal line through the point  $(-3,4)$ .
17. Name a point on the line  $2x + 9y = 3$ .
18. Determine  $K$  so that the line between  $(3,k)$  and  $(-1,9)$  has a slope of  $-4$ .
19. What is the slope of a vertical line?
20. Find the equation in slope-intercept form of the line having  $y$ -intercept  $6$  and parallel to the  $x$ -axis.
21. Find the equation in standard form of the line having  $x$ -intercept  $-4$  and parallel to the  $y$ -axis.
22. Find the equation in standard form of the line having  $x$ -intercept  $4$  and  $y$ -intercept  $3$ .
23. Find the equation in slope-intercept form of the line having  $x$ -intercept  $-3$  and  $y$ -intercept  $-1$ .
24. Find the equation in slope-intercept form of the line through  $Q(-3,2)$  and parallel to the line containing  $(2,3)$  and  $(1,-2)$ .
25. Determine  $K$  so that the line  $(2k + 1)x + 3y = 15$  has a slope of  $-\frac{3}{5}$ .

