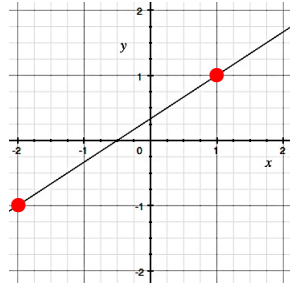


3.2 Geometric Characteristics of Lines

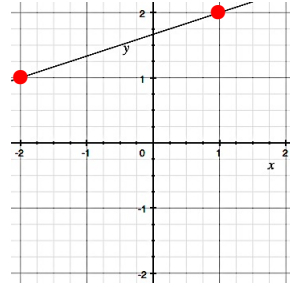
Name _____

Determine the slope of each line.

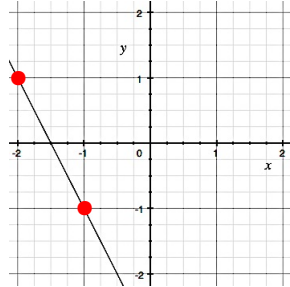
1.



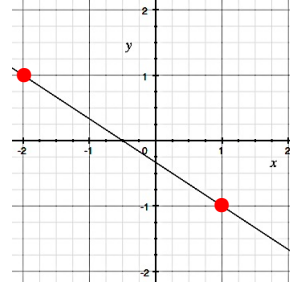
2.



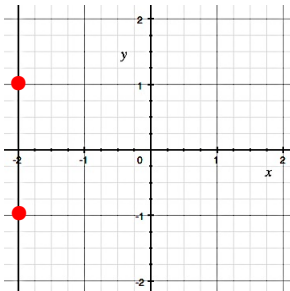
3.



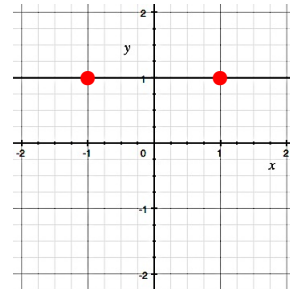
4.



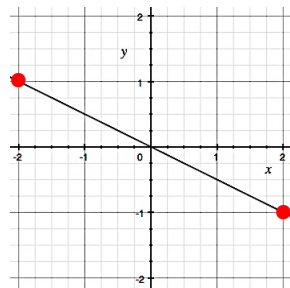
5.



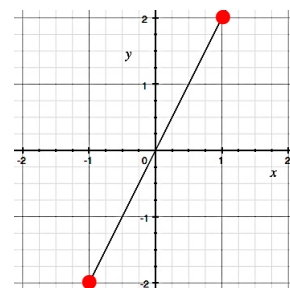
6.



7.



8.



Answers: 1. $\frac{2}{3}$; 3. -2 ; 5. undefined; 7. $-\frac{1}{2}$

Determine the slope of the line that passes through each pair of points.	
9. (3, 4) and (5, 9)	10. (0, 4) and (3, 8)
11. (2, -1) and (5, -1)	12. (3, 4) and (3, -9)
Determine the slope and the y -intercept of each equation.	
13. $y = \frac{2}{3}x + 5$	14. $y = -5x + 2$
15. $2x + 6y = 12$	16. $4x + 3y = 6$
17. $6y = 12x$	18. $y = -8x$
19. $y = 15$	20. $y = -2$
Answers: 9. $m = \frac{5}{2}$; 11. $m = 0$; 13. $m = \frac{2}{3}, b = 5$; 15. $m = -\frac{1}{3}, b = 2$; 17. $m = 2, b = 0$; 19. $m = 0, b = 15$	

Write an equation of the line with the given slope, m and y -intercept, b . Write it in slope-intercept form, $y = mx + b$.	
21. $m = -5$ and $b = 10$	22. $m = 3$ and $b = -1$
23. $m = \frac{5}{6}$ and $b = -2$	24. $m = -\frac{1}{4}$ and $b = 5$
25. $m = 0$ and $b = 8$	26. $m = 0$ and $b = -6$
27. $m = \frac{1}{7}$ and $b = 0$	28. $m = -\frac{3}{4}$ and $b = 0$
Determine whether the following pairs of lines are parallel, perpendicular, or neither.	
29. $y = -5x + 1$ and $y = \frac{1}{5}x + 12$	30. $y = \frac{1}{2}x + 5$ and $y = -2x - 2$
31. $y = -3x - 10$ and $y = 3x + 2$	32. $y = 4x - 5$ and $y = -4x - 4$
33. $y = 2x$ and $y = 2x + 12$	34. $y = -3x - 4$ and $y = -3x$
35. $y = 15$ and $x = 12$	36. $x = -5$ and $y = 1$
Answers: 21. $y = -5x + 10$; 23. $y = \frac{5}{6}x - 2$; 25. $y = 8$; 27. $y = \frac{1}{7}x$; 29. perpendicular; 31. neither; 31. parallel; 35. perpendicular	

Write the equation of the line in slope-intercept form, $y = mx + b$ that has the following characteristics:	
37. slope is -3 and passes through the point $(5, 6)$	38. slope is 4 and passes through the point $(-1, 2)$
39. passes through the points $(-3, 1)$ and $(6, 4)$	40. passes through the points $(-1, 3)$ and $(2, -3)$
41. passes through $(2, 4)$ and is parallel to $y = \frac{1}{2}x - 1$.	42. passes through $(2, 3)$ and is parallel to $y = 3x - 9$.
43. passes through $(1, 2)$ and is perpendicular to $y = \frac{1}{2}x - 1$.	44. passes through $(3, -2)$ and is perpendicular to $y = 3x - 9$.
Answers: 37. $y = -3x + 21$; 39. $y = \frac{1}{3}x + 2$; 41. $y = \frac{1}{2}x + 3$; 43. $y = -2x + 4$	