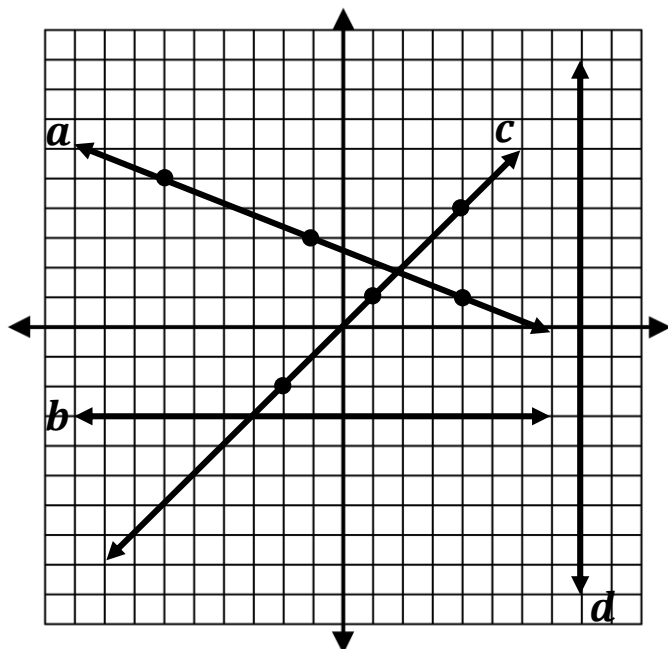# Notes 3.5 & 3.6
Slope, Parallel, and Perpendicular Lines

Find the slope of each line.

Slope of $line\ a$: _____

Slope of $line\ b$: _____

Slope of $line\ c$: _____

Slope of $line\ d$: _____

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SLOPE FORMULA
Given two points (x₁, y₁) and (x₂, y₂)
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$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

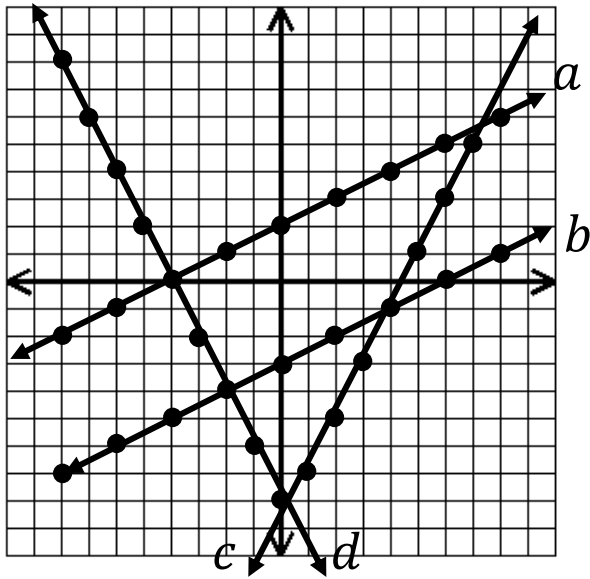Find the slope of the line through the points:

1. $(-2, 3)$ and $(4, 8)$

2. $(7, -6)$ and $(-5, 2)$

3. $(1, 2)$ and $(5, 2)$

4. $(2, 1)$ and $(2, 5)$

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Find the slope of each line.

Slope of *line a*: _____

Slope of *line b*: _____

Slope of *line c*: _____

Slope of *line d*: _____

Compare the lines.

Lines that are parallel have slopes that are _____.

Lines that are perpendicular have slopes that are

_____.

Fill in the chart.

Given the slope	A slope parallel	A slope perpendicular
$\dfrac{2}{3}$		
-4		
$-\dfrac{1}{4}$		
2		

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Notes 3.5 & 3.6 (Continued)
Determine if the given lines are parallel, perpendicular or neither.

5. $y = -\dfrac{1}{2}x + 4$ 6. $y = 3x + 7$ 7. $y = \dfrac{x}{7} - 6$

$\quad y = 2x - 8$ $\qquad\qquad y = -3x + 2$ $\qquad\quad y = \dfrac{1}{7}x$

_____ $\quad$ _____ $\quad$ _____

8. $-4x + y = 5$ 9. $-5x + y = 3$ 10. $3y = x - 12$

$\quad x + 4y = 4$ $\qquad\qquad 5x + y = 8$ $\qquad\qquad 3y = x + 6$

_____ $\quad$ _____ $\quad$ _____

Write the equation of a line given the following:

11. slope $= 3$; y-intercept $= -2$

12. $(-3, 4)$ & $(5, -7)$

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Notes 3.5 & 3.6 (Continued)
Determine if the given lines are parallel, perpendicular or neither.

5. $y = -\dfrac{1}{2}x + 4$

   $y = 2x - 8$

   _____

6. $y = 3x + 7$

   $y = -3x + 2$

   _____

7. $y = \dfrac{x}{7} - 6$

   $y = \dfrac{1}{7}x$

   _____

8. $-4x + y = 5$

   $x + 4y = 4$

   _____

9. $-5x + y = 3$

   $5x + y = 8$

   _____

10. $3y = x - 12$

   $3y = x + 6$

   _____

Write the equation of a line given the following:

11. slope $= 3$; y-intercept $= -2$

12. $(-3, 4)$ & $(5, -7)$

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