Name: _____ Period: _____

Algebra 1

Parallel and Perpendicular Lines

Targets	**Learning Targets**	Got it	Ok	No way
TP-1	I can determine if lines are parallel and write equations for parallel lines.	□	□	□
TP-2	I can determine if lines are perpendicular and write equation for perpendicular lines.	□	□	□

Date	**Lesson/Activity**	**Homework Assignment** o = only do odd problems	**Turned In?**
	Writing Equation in Slope Intercept From	Writing Equations Review	
	Parallel Lines	Parallel Line Investigation	
		Parallel Lines Worksheet	
	Perpendicular Lines	Perpendicular Investigation	
		Perpendicular Worksheet	
	Parallel and Perpendicular Review	Activity	
	Parallel and Perpendicular Test	All homework must be completed and turned in before test to be eligible for retakes	

Writing Equations Review

Using the information given write equations for the following lines in slope intercept form.

1. $Slope = 1, y - intercept = -3$	8. $(2,-2)\ and\ (-5,5)$
2. $Slope = -1, y - intercept = -1$	9. $(0,-3) and\ (-4,0)$
3. $Slope = \frac{3}{2}, y - intercept = -5$	10. $(-2,-4) and\ (2,3)$
4. $(2,-2),\ Slope = 1$	11. $(2,-1) and\ (5,-3)$
5. $(3,5), Slope = 0$	12. $(3,3) and\ (0,1)$
6. $(1,4), Slope = 4$	13. $(-3,1) and\ (0,0)$
7. $(4,3), Slope = \frac{3}{4}$	14. $(5,-4) and\ (0,-2)$

Examples

Copy down the following examples of writing linear equations as we work through them on the board.

1. $Slope = \frac{1}{2}, y - intercept = 1$

2. $(2,-1), Slope = -2$

3. $(5,2) and\ (0,3)$

Parallel lines Worksheet

Determine whether the graphs of the equations are parallel lines.

1. $x + 4 = y$ and $y - x = -3$
2. $3x - 4 = y$ and $y - 3x = 8$
3. $y + 3 = 6x$ and $-6x - y = 2$
4. $y = -4x + 2$ and $-5 = -2y + 8x$
5. $y = 2x + 7$ and $5y + 10x = 20$
6. $y = -7x - 5$ and $2y = -7x - 10$
7. $3x - y = -9$ and $2y - 6x = -2$
8. $y - 6 = -6x$ and $-2x + y = 5$
9. $-3x + y = 4$ and $3x - y = -6$
10. $-4 = y + 2x$ and $6x + 3y = 4$
11. $8x - 4y = 16$ and $5y - 10x = 3$
12. $-4x = 3y + 5$ and $8x + 6y = -1$

Parallel lines Worksheet

Write an equation for the line containing the given point and parallel to the given line. Graph both lines on another sheet.

13. (0,6); $y - 3x = 4$

14. (-2, 4); $y = 2x - 3$

15. (0, 2); $3y - x = 0$

16. (1, 0); $2x + y = -4$

17. (-3, 2); $x - y = 5$

18. (-1, -1); $2y + 4x = 8$

19. (0, 0); $2x - y = 6$

20. (-4, 5); $3x - 2y = 6$

Perpendicular Lines Worksheet

1. Write the equation of the line that is parallel to the graph of $y = \frac{1}{2}x + 6$, and whose y-intercept is -2.

2. Write the equation of the line that is parallel to the graph of $y = -4x - 9$, and whose y-intercept is 3.

3. Write the equation of the line that is parallel to the graph of $3x - y = 5$, and goes through the point (0, -7).

Write the slope-intercept form of an equation of the line that passes through the given point and is parallel to the graph of each equation.

4. (3, 2), $y = x + 5$

5. (-2, 5) $y = -4x + 2$

6. (-3, 4), $3y = 2x - 3$

7. (-1, -4) $9x + 3y = 8$

8. Write the equation of the line that is perpendicular to the graph of $y = \frac{1}{2}x + 6$, and whose y-intercept is (0, -2).

9. Write the equation of the line that is perpendicular to the graph of $y = -4x - 9$, and whose y-intercept is (0, 3).

10. Write the equation of the line that is perpendicular to the graph of $3x - y = 5$, and goes through the point (0, -7).

Write the slope intercept form of an equation of the line that passes through the given point and is perpendicular to the graph of each equation.

11. (3, 2) $y = x + 5$

12. (-8, 5), $y = -4x + 2$

13. (-6, 4), $3y = 2x - 3$

14. (-1, -4), $9x + 3y = 8$

Determine if the following are parallel, perpendicular or neither.

15. $y = 3x + 2$
$9x - 3y = -6$

16. $y = -2x + 3$
$2x - 4y = 8$

17. $y = 4x + 1$
$8x - 2y = 2$

18. $y = \frac{2}{3}x - 2$
$x + y = 4$