Writing the Equation of a Line
Student Worksheet

The first group of problems will have you write the equation of a line given a point (x,y) and the slope=m. You will first need to use the slope-intercept form, y=mx+b to find b. Now that you have m and b, your equation will be y= (m)x + (b), where you substitute those values in for (m) and (b).		
1. (2,2) slope=2	2. (4,10) slope = $\frac{1}{2}$	3. (0,10) slope = 0

Your second group of problems will have you write the equation of a line given two points (x_1, y_1) and (x_2, y_2). You will need to first find the slope (m) using the formula $m = \frac{y_2 - y_1}{x_2 - x_1}$. Once you have the slope (m) you need to find your y-intercept b, as you did before. Now that you have m and b, your equation will be y= (m)x + (b), where you substitute those values in for (m) and (b).	
4. (1,4) and (8,10)	5. (2,6) and (7,6)
6. (2,10) and (6,2)	7. (0,4) and (8,0)

Your third group of problems will have you write the equation of a line given a point (x_1, y_1) and a line parallel to y=mx+b. You need to find the slope of the line (m) from the equation and use that with the point (x_1, y_1) in y=mx + b to find your y-intercept. Once you have the slope (m) you need to find your

y-intercept b, as you did before. Now that you have m and b, your equation will be y= (m)x + (b), where you substitute those values in for (m) and (b).	
8. (-1,10) parallel to y= 2x + 2	9. (6,4) parallel to y=-0.25x + 10

Your third group of problems will have you write the equation of a line given a point (x_1, y_1) and a line perpendicular to y=mx+b. You need to find the slope of the line (m) from the equation and use that with the point (x_1, y_1) in y=mx + b to find your y-intercept. Once you have the slope (m) you need to find your y-intercept b, as you did before. Now that you have m and b, your equation will be y= (m)x + (b), where you substitute those values in for (m) and (b).	
10. (3,4) perpendicular to y= 8x - 4	11. (2,4) perpendicular to y=-2x+21