***Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

**Parallel and Perpendicular Lines**

1. If two lines are parallel, then there slopes are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ but they have a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ y-intercept.
2. If two lines are perpendicular, there slopes are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, meaning you \_\_\_\_\_\_\_\_\_ the \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_ it.
3. The slope of line CD is -5/2, what is the slope of line MN if line CD and line MN are parallel lines?
4. The slope of line 1 is -6. Find the slope line 2 if they are perpendicular to each other.
5. The equation of line 1 is $y=-\frac{2}{3}x+\frac{4}{3}.$ Line 2 is perpendicular to line 1. What is the slope of line 2?
6. A line has zero slope. What is the slope of a line parallel to that line?
7. A line has zero slope. What is the slope of a line perpendicular to that line?
8. Line AB passes through the points (-4, -10) and (-2, 8). If line RP is parallel to line AB, what is the slope of line RP?
9. Line JK has an equation $2x + 5y = -10$. If line QP is perpendicular to line JK, what is the slope of line QP?
10. Line 1 is parallel to line 2. If line 1 passes through the points (-3, 5) and (-10, 0), what is the slope of line 2?
11. Line AB and line KM are perpendicular to each other. If line KM has undefined slope, what is the slope of line AB?
12. Line QP contains the points (-5, 2) and (5, -4). Line XY passes through (0, -2) and (5, 8). What is the relationship between the two lines? (parallel, perpendicular or neither?).

Write the equation for the line containing the given point and **parallel** to the given line. ***(Note: The slopes of parallel lines are equal!)***

1. *(-2, 1); y = 1/2x – 2*
2. *(-3, 5); y = 4/3x – 7*
3. *(-3, 4); -2x + 3y = -3*

Write the equation for the line containing the given point and **perpendicular** to the given line. ***(Note: The slopes of perpendicular lines are negative reciprocals!)***

1. *(0, 6); y = 3x – 1*
2. *(-2, 4); y = 2x – 3*
3. *(-3, 2) ; y = -2/3x – 1*
4. *(8, -6); y = -1/4x + 5*
5. *(9, -2); 3x – 2y = 6*
6. *(2, 0); 2x + y = -4*