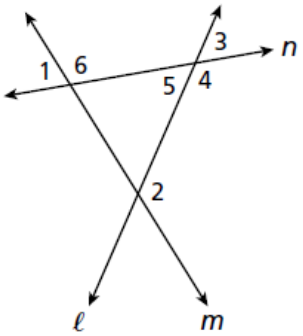
Chapter 3 Test Review **Name:** _____ **Per:** _____

1. Lines that do not intersect and are in different planes are called _____.

2. Identify the transversal and classify each angle pair:



a. ∠5 and ∠2 are _____ angles

The transversal is line _____

b. ∠2 and ∠4 are _____ angles

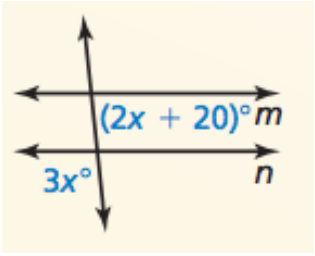
The transversal is line _____

c. ∠6 and ∠3 are _____ angles

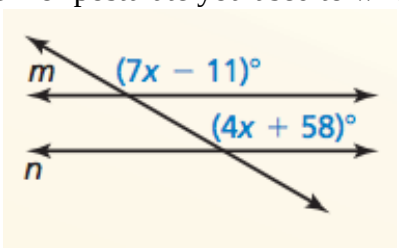
The transversal is line _____

3. Find the value of x that makes $m \parallel n$. State the theorem or postulate you used to write your first equation.

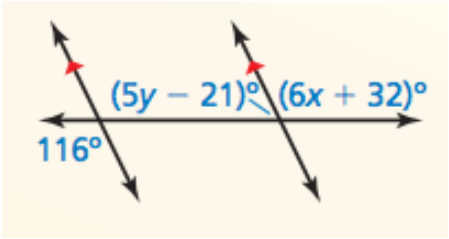
a.



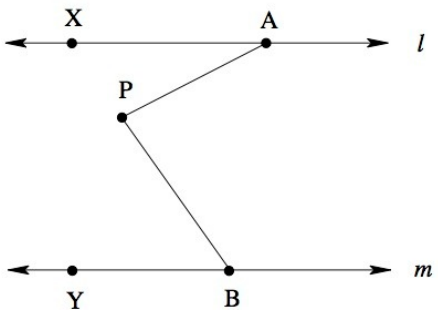
b.



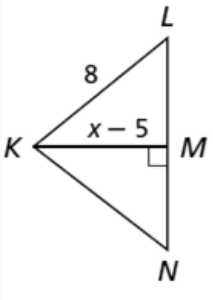
4. Find the values of x and y. State the theorem or postulate you used to set up the two equations needed to solve for x and y.



5. Find $m\angle APB$ if $m\angle PAX = 31°$, $m\angle PBY = 54°$, and $l \parallel m$.



6. Name the shortest segment from K to $\overline{LN}$, then write and solve the inequality to find x.



7. Fill in the blank for each statement:

a. Horizontal lines have (circle one: zero / undefined) slope.

b. Vertical lines have (circle one: zero / undefined) slope.

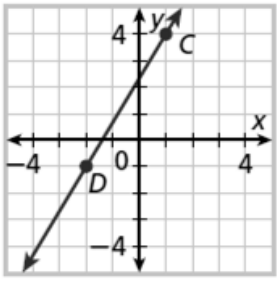
c. Finish the first statements of the theorem:
Parallel Lines Theorem: In a coordinate plane, two distinct non-vertical lines are parallel if and only if they have the _____slope.

Perpendicular Lines Theorem: In a coordinate plane, two distinct non-vertical lines are perpendicular if and only if the _____ of their slopes is _____.
OR Perpendicular Lines Theorem: In a coordinate plane, two distinct non-vertical lines are perpendicular if and only if their _____ are _____ _____.

d. The slope-intercept form for the equation of a line is _____

e. The point-slope form for the equation a line is _____

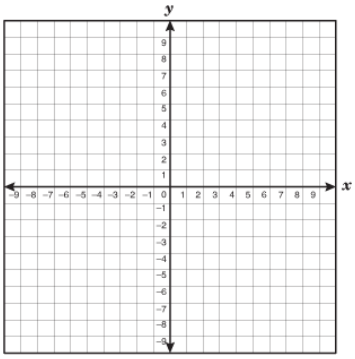
8. Use the slope formula to determine the slope of the given line.



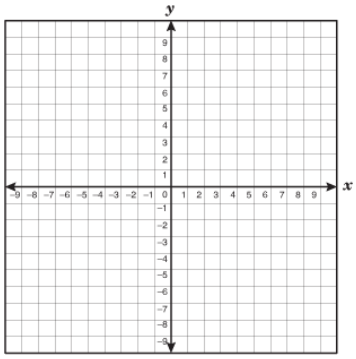
9. Use the graph given in #8 to find the equation (in slope-intercept form) of $\overleftrightarrow{CD}$. (HINT: Use the slope you already found. Also, which point would you use for (x, y) to help find the equation? point C? point D? Does it matter?)

10. Graph the lines below:

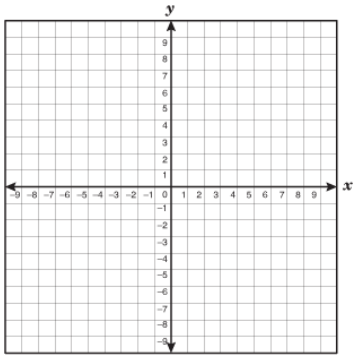
a. $y = 2x + 3$



b. $4x - 6y = 18$



c. x = 3



11. Use slopes to determine if the lines are parallel, perpendicular, or neither.

$\overleftrightarrow{JK}$ and $\overleftrightarrow{LM}$ if J(4, 3), K(-4, -2), L(5, 6), and M(-3, 1)

12. Write the equation of the line *parallel* to $y = 4x - 3$ that goes through the point (3, 2). Write your answer in slope-intercept form.

13. Write the equation of the line *perpendicular* to $5x + 2y = 1$ that goes through the point (9, -1). Write your answer in slope-intercept form.

14. Fill in the flow chart proof:

Given: $\overline{AD} \parallel \overline{BC}, \overline{AD} \perp \overline{AB}, \overline{DC} \perp \overline{BC}$

Prove: $\overline{AB} \parallel \overline{CD}$