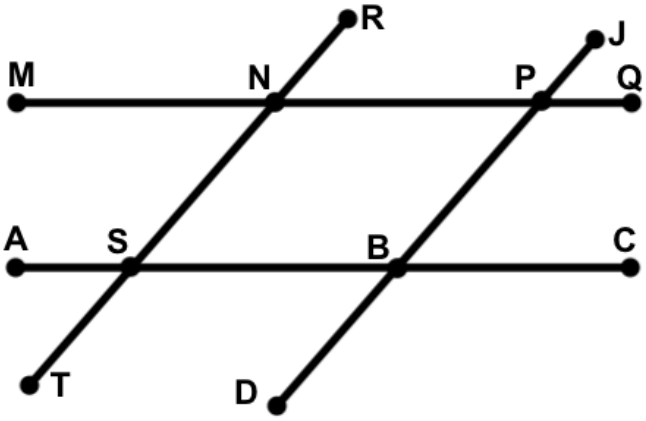
Geometry Honors
Unit 5 Parallel and Perpendicular Lines
Unit 5 Review

Mathematician: _____
Period:_____

Target 1: Classify and identify angles formed by parallel lines and transversals

Directions: Use the diagram to answer the questions 1 through 4. **SELECT ALL THAT APPLY!**

Given: $\overline{RT} \,||\, \overline{JD}$ and $\overline{MQ} \,||\, \overline{AC}$



1) Name all angles that are congruent to $\angle DBC$

(A) $\angle DBS$
(B) $\angle BSN$
(C) $\angle QPB$
(D) $\angle SBP$
(E) $\angle TSB$

2) Name the alternate interior angle(s) that is/are congruent to $\angle SNP$.

(A) $\angle NSA$
(B) $\angle ASN$
(C) $\angle MNR$
(D) $\angle DBS$
(E) $\angle SNM$

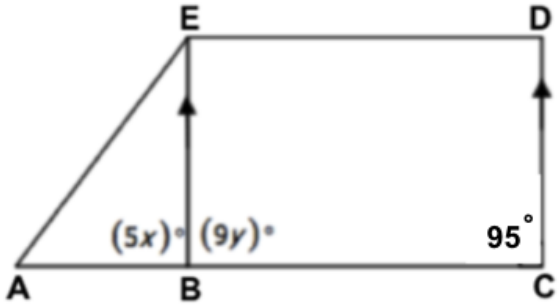
3) Name the corresponding angle(s) that is/are congruent to $\angle DBS$.

(A) $\angle AST$
(B) $\angle BPQ$
(C) $\angle BPN$
(D) $\angle CPD$
(E) $\angle ASN$

4) Name the alternate exterior angle(s) that is/are congruent to $\angle RNP$.

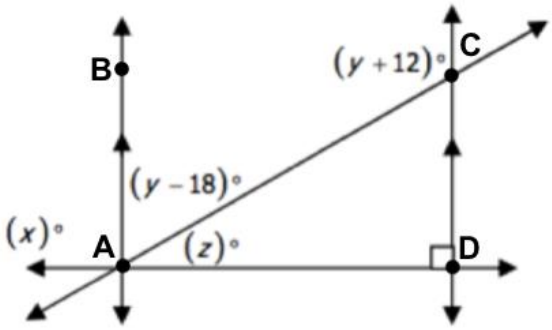
(A) $\angle JPQ$
(B) $\angle DBC$
(C) $\angle DBS$
(D) $\angle AST$
(E) $\angle BPQ$

5) Find the sum of x and y.



x: _____ y: _____ sum: _____

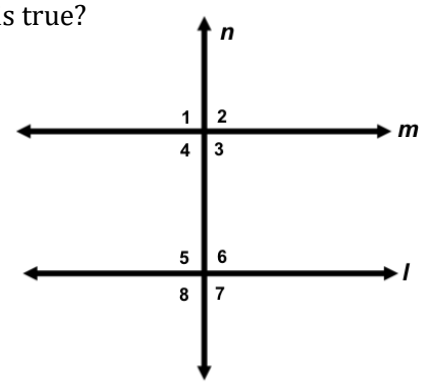
6) Find the sum of x, y, and z.



x: _____ y: _____ z: _____ sum: _____

Target 2: Apply and prove statements using perpendicular theorems

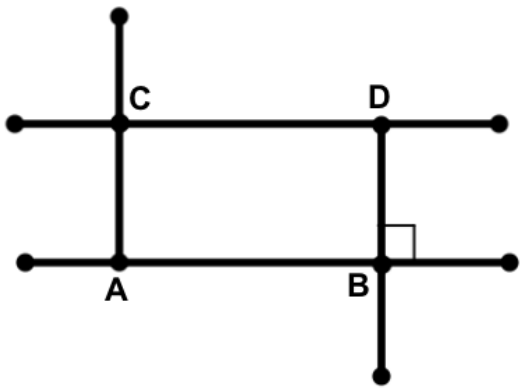
7) If $m\angle 3 = 90°$ and $m\angle 3 \cong m\angle 8$, which of the following is true?



Select all that apply

(A) $n \perp l$
(B) $n \perp m$
(C) $l \parallel m$
(D) $m\angle 8 + m\angle 3 = 180°$
(E) $\angle 1$ is a supplement of $\angle 7$

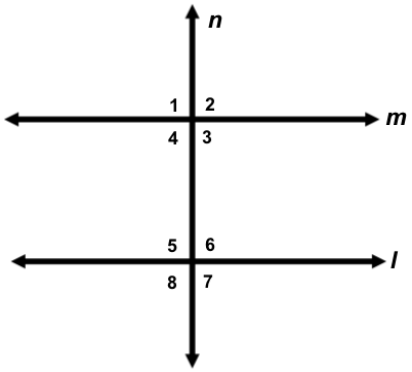
8) If $AC = 5$ and $DB = 5$, which of the following is true?



Select all that apply

(A) $\overline{AC} \cong \overline{BD}$
(B) $\overline{AC} \perp \overline{CD}$
(C) $\overline{AB} \parallel \overline{CD}$
(D) $\overline{AC} \parallel \overline{BD}$
(E) There is not enough information provided.

9) If $m\angle 5 = 90°$, which of the following is true?



Select all that apply.

(A) $n \perp l$
(B) $n \perp m$
(C) $l \parallel m$
(D) $m\angle 8 + m\angle 3 = 180°$
(E) $\angle 5$ is supplementary to $\angle 7$

10) $\angle 1$ and $\angle 2$ are congruent adjacent complementary angles. Which of the following must be true?

Select all that apply.

(A) $\angle 1 + \angle 2 = 90°$
(B) $\angle 1 + \angle 2 = 180°$
(C) $\angle 1 = 45°$
(D) $\angle 1$ & $\angle 2$ are a linear pair.
(E) $\angle 2 \cong \angle 1$

11) If line *m* is perpendicular to line *n* and line *p* is parallel to line *n*, then which of the following must be true?

Select all that apply.

(A) $m \perp n$
(B) $m \parallel n$
(C) $p \perp m$
(D) $p \parallel m$
(E) m @ p

12) $\angle 1$ and $\angle 2$ are congruent supplementary angles. Which of the following must be true?

Select all that apply.

(A) $\angle 1 + \angle 2 = 90°$
(B) $\angle 1 + \angle 2 = 180°$
(C) $\angle 1 = 45°$
(D) $\angle 1$ & $\angle 2$ are a linear pair.
(E) $\angle 2$ is a right angle

Target 3: Use parallel and perpendicular lines to write linear equations and to determine the distance between a point and a line

Directions: For #13 and #14, use the following functions: $f(x) = -\frac{4}{3}x - 2$ $g(x) = \frac{17}{6}x + 6$

13) Find the function $h(x)$ of the line that is **perpendicular** to $f(x) = -\frac{4}{3}x - 2$ and passes through (-7,-1). Then find the sum of the *y*-intercept and the slope.

Equation: _____

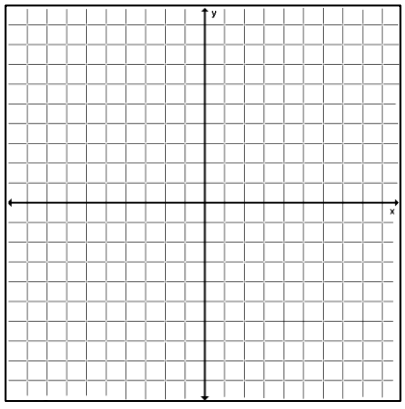
m: _____ b : _____ SUM: _____

14) Find the function $k(x)$ of the line that is **parallel** to $f(x) + g(x)$ and passes through (2,-5). Then find the sum of the *y*-intercept and the slope.

Equation: _____

m: _____ b: _____ SUM: _____

15) Find the distance between the point $A\ (-3, -9)$ and the line $f(x) = -3x + 2$.

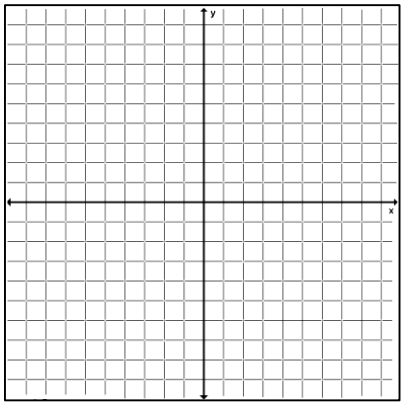


$\perp_m =$ _____

Point of Intersection: _____

Distance: _____

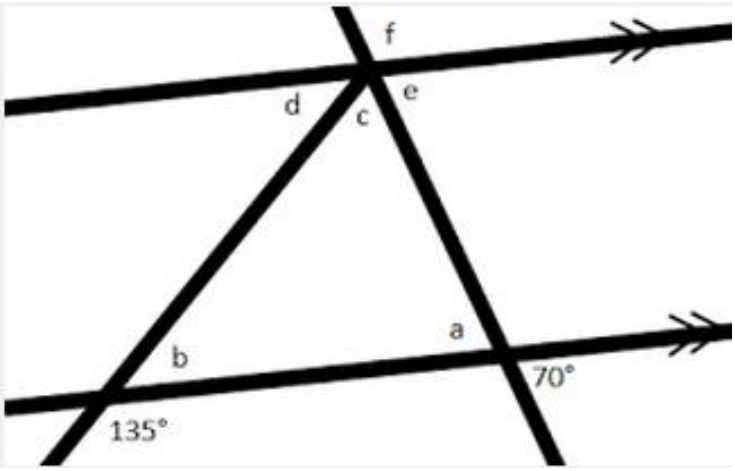
16) Find the distance between the lines $f(x) = \frac{1}{2}x + 7$ and $f(x) = \frac{1}{2}x - 3$.



Distance: _____

Target 4: Use angle properties in triangles to determine unknown angle measurements

Directions: Use the diagram to answer the following questions.



17) $m\angle a$

18) $m\angle b$

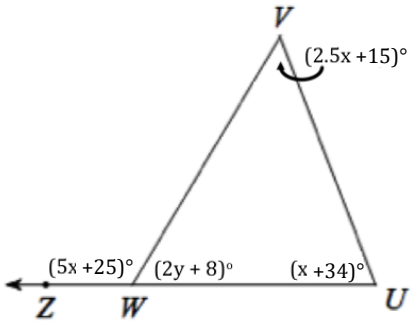
19) $m\angle c$

20) $m\angle d$

21) $m\angle e$

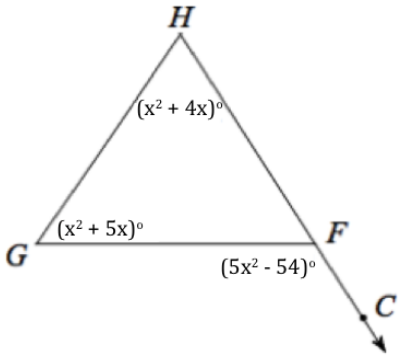
22) $m\angle f$

23)



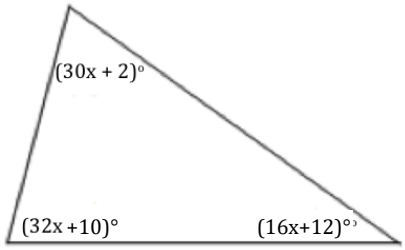
$x =$ _____ $y =$ _____ sum = _____

24)



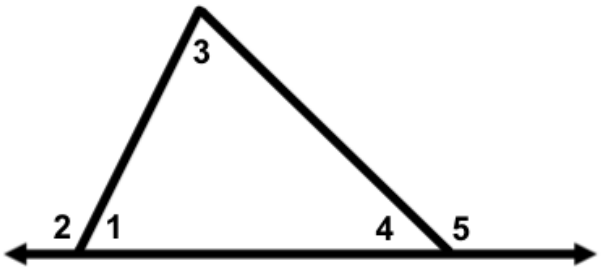
$x =$ _____ $m\angle HGF =$ _____

25)



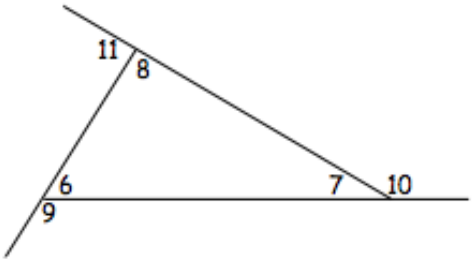
$x =$ _____

26) Use the figure to answer the following questions. $m\angle 3 = 52°$ and $m\angle 1 = 67°$. Select all that apply.



(A) ∠4 & ∠5 are supplementary angles
(B) $m\angle 2 = m\angle 5$
(C) $m\angle 1 + m\angle 3 = m\angle 5$
(D) $m\angle 2 = m\angle 3 + m\angle 4$
(E) $m\angle 4 = 61°$

27) Use the figure to answer the following questions. $m\angle 8 = 90°$. Select all that apply.



(A) ∠6 & ∠7 are supplementary angles
(B) $m\angle 8 + m\angle 6 > 180°$
(C) $m\angle 8 + m\angle 6 < 180°$
(D) $m\angle 9 = m\angle 8 + m\angle 7$
(E) $m\angle 9 = m\angle 10$

Free Response

28) Construct a perpendicular line from a point on the line.

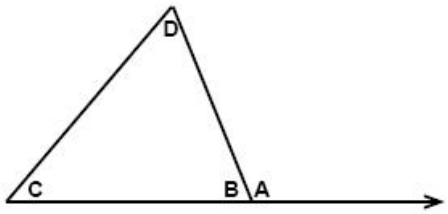
29) Construct a perpendicular line to the original line that passes through the given point.

30) Construct a line parallel to the given one.

31) Construct a line parallel to the given one, through the given point.

32) Directions: Complete a two-column proof on the Exterior Angle Theorem.

Given: ΔBCD
$\angle A \; and \angle B \; form \; a \; linear \; pair$
Prove: $\angle A = \angle D + \angle C$



Statements	Reasons