Geometry (E) Name: _____

Semester 1 – Final Exam Review Period: ____

Unit 01 – Intro to Geometry

Key Terms:

Point	Congruent Segments	Segment Bisector
Segment	Congruent Angles	Segment Trisector
Ray	Tick marks	Complementary Angles
Line	Union	Supplementary Angles
Plane	Intersection	Vertical Angles
Collinear	Midpoint	Linear Pair
Coplanar		

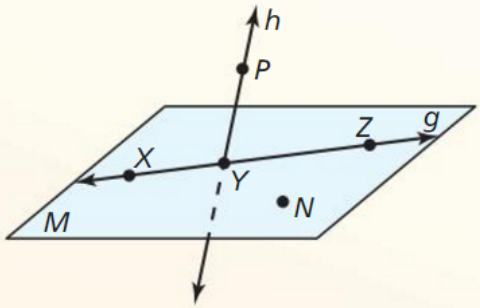
Important Concepts/Standards (I can…):

- I can label points, segments, rays, lines, and planes.
- I can find missing lengths using segment addition.
- I can find missing angles using angle addition.
- I can identify the union and intersection of segments, rays, and lines.

Unit 01 (Intro to Geometry) – Review Problems

Use the diagram.

1. Give another name for plane M.
2. Name a line in the plane.
3. Name a line intersecting the plane.
4. Name two rays.
5. Name a pair of opposite rays.
6. Name a point not in plane M.



7.) Point C is between points B and D on $\overline{BD}$. You are given $BC = 12x - 6$, $BD = 24$, and $CD = 8x$.

a. Draw a diagram that illustrates the information above.

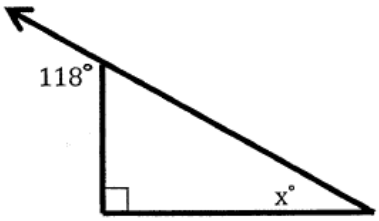
b. Write and solve an equation to find the value of x.

c. Find the lengths of $\overline{BC}$ and $\overline{CD}$.

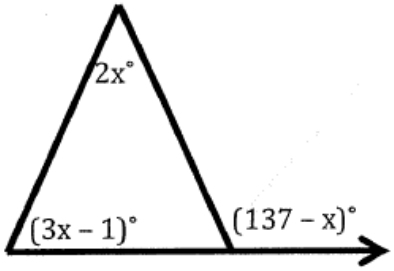
d. Is C the midpoint of $\overline{BD}$? Briefly explain your reasoning.

Use the exterior angle theorem to find the value of *x*.

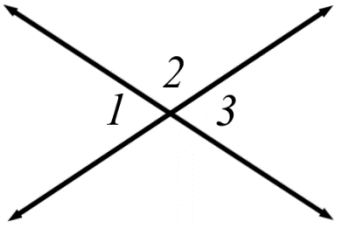
8.)



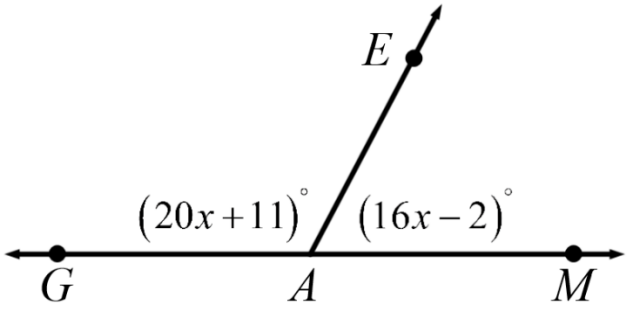
9.)



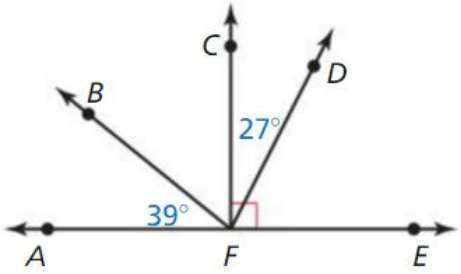
10.) If $m\angle 1 = (2x+13)^\circ$ and $m\angle 2 = (x^2-1)^\circ$, find $m\angle 3$.



11.) Find $m\angle GAE$.



12.) In the diagram, find $m\angle DFE$, $m\angle BFC$, and $m\angle BFE$.



13.) Determine the union ($\cup$) or intersection ($\cap$) of the following statements.

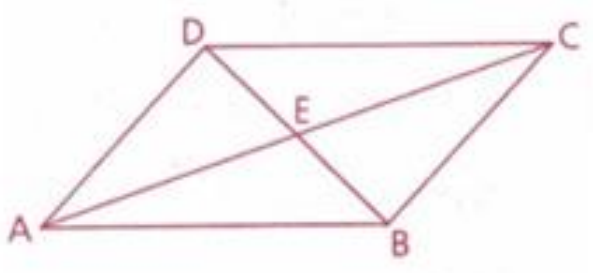
a $\overline{AB} \cap \overline{BC}$ = ____

b $\overrightarrow{EC} \cup \overrightarrow{EA}$ = ____

c $\overleftrightarrow{AC} \cap \overleftrightarrow{DB}$ = ____

d $\overline{DC} \cap \overline{AB}$ = ____

e $\overrightarrow{AC} \cap \overrightarrow{EC}$ = ____



Unit 02 – Parallel Lines

Key Terms:

Parallel Lines
Transversal
Perpendicular
Skew Lines
Straight Angles
Right Angles
Alternate Interior Angles
Alternate Exterior Angles
Corresponding Angles
Same Side Interior Angles
Same Side Exterior Angles

Important Concepts/Standards (I can…):

- I can identify and label parallel lines and planes.
- I can identify skew lines from a diagram.
- I can define, recognize from a diagram, and write the symbols for parallel and perpendicular.
- I can name lines associated with parallel lines, including AIA, AEA, Corresponding, SSI, and SSE.
- I can find the measures of angles associated with parallel lines using congruent and supplementary relationships.
- I can find the measures of missing angles using the triangle sum and exterior angle theorems.

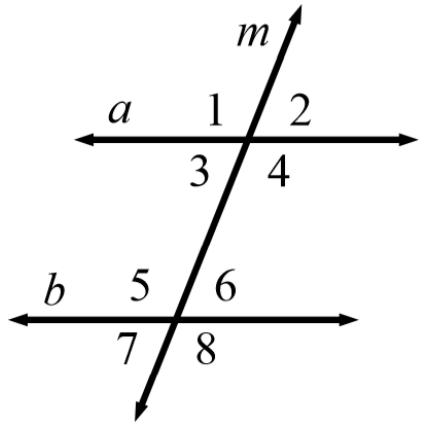
Unit 02 (Parallel Lines) – Review Problems

14.) List **one pair** of alternate interior angles.

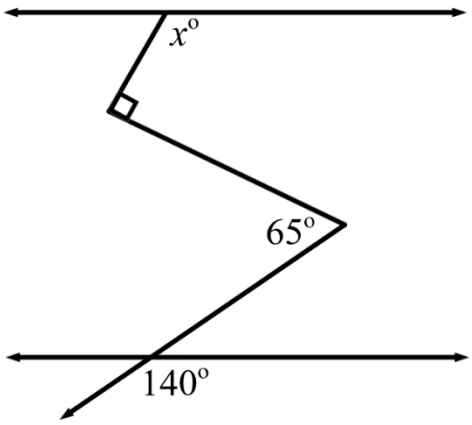
15.) What name do we give the angle pair of $\angle 2$ and $\angle 8$?

16.) If $a \parallel b$ and $m\angle 5 = 121.7°$, what is $m\angle 2$?

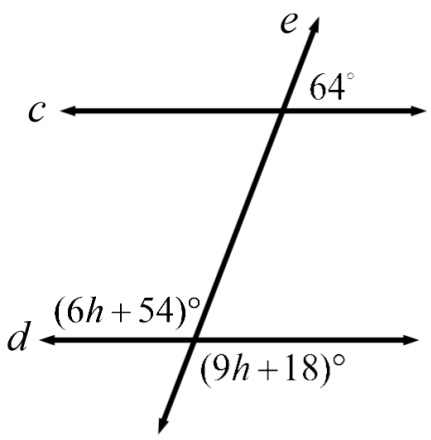
17.) If $a \parallel b$, are $\angle 4$ and $\angle 6$ congruent or supplementary? Briefly explain.



18.) Find the value of ***x*** in the Crook problem shown.



19.) Is $c \parallel d$? Show your work and briefly explain your answer.



Unit 03 – Transformations

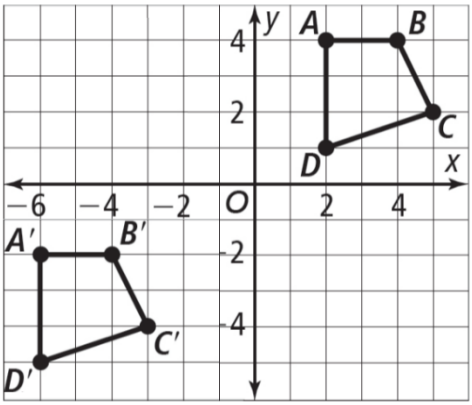
Key Terms:

Transformation	Reflection
Preimage	Line of Symmetry
Image	Rotation
Translation	Rotation Symmetry
Translation Rule	Angle or Rotation
Vector Form	Clockwise
Composition	Counterclockwise
Prime Notation	

Important Concepts/Standards (I can…):

- I can identify the 3 rigid motion transformations.
- I can determine preimage and image of a point under a transformation given a graph or coordinates.
- I can translate a point given words, a rule, or a vector.
- I can graph identify and draw the lines representing the x-axis, y-axis, y = x, and y = – x .
- I can reflect a point or figure over a line.
- I can rotate a figure 90^0, 180^o, or 270^o both clockwise and counterclockwise.
- I can perform a composition transformation (up to 3) using translations, reflections, and rotations.

20.) For the transformation shown to the right;



a.) Describe the translation in words.

b.) Write a rule describing the translation.

c.) Write the component form of the vector for this translation.

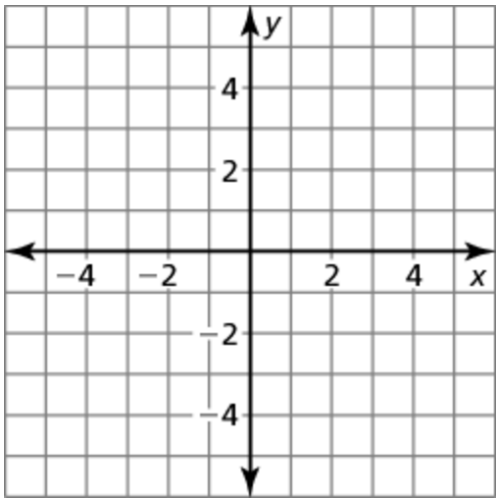
Use the translation rule $(x, y) \rightarrow (x-5, y+7)$ to answer the questions below.

21.) Determine the coordinates of B if $B'(0, -10)$.

22.) Determine the coordinates of C' if $C(-1, -2)$.

23.) **Composition Transformation.** A segment with endpoints at $J(2,4)$ and $K(-1,1)$ undergoes ***three consecutive transformations***. List the coordinates after each transformation. Use the coordinate plane if you wish, but you are not required to graph anything.

- Rotated $180°$ around the origin
- Translated under the rule $(x, y) \rightarrow (x+4, y-2)$
- Reflected over the line y =-x



$J'(\quad,\quad)$

$K'(\quad,\quad)$

$J''(\quad,\quad)$

$K''(\quad,\quad)$

$J'''(\quad,\quad)$

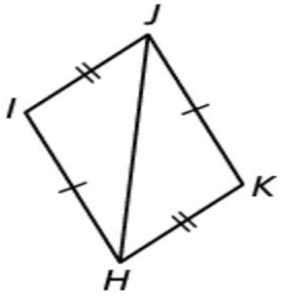
$K'''(\quad,\quad)$

Unit 04 – Congruent Polygons

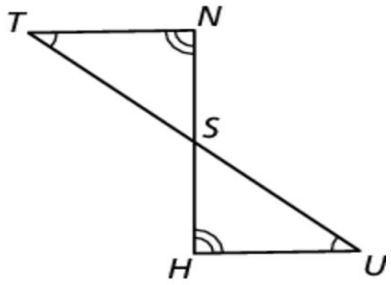
Key Terms:	**Important Concepts/Standards (I can…):**
Congruent Triangles Congruent Figures Corresponding Parts Definition Theorem Reflexive Property Triangle Congruency Theorems	• I can identify and label parallel lines and planes. • I can identify skew lines from a diagram. • I can name lines associated with parallel lines, including AIA, AEA, Corresponding, SSI, and SSE. • I can find the measures of angles associated with parallel lines using congruent and supplementary relationships. • I can find the measures of missing angles using the triangle sum and exterior angle theorems.

Decide whether the triangles can be proven congruent by the given triangle congruence theorem. If not, state what information is needed.

24.) $\triangle IJH \cong \triangle KHJ$ by SSS

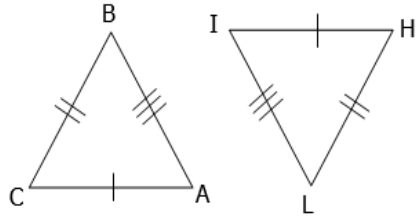


25.) $\triangle TNS \cong \triangle UHS$ by ASA



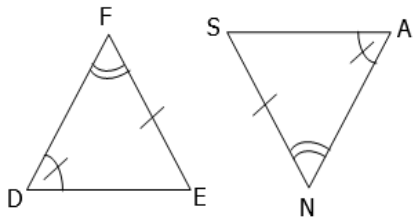
For each problem, give the correct naming order of the congruent triangles. Write that name in order on the lines for the problem number (see box at bottom). Also, indicate which postulate or theorem is being used.

26.



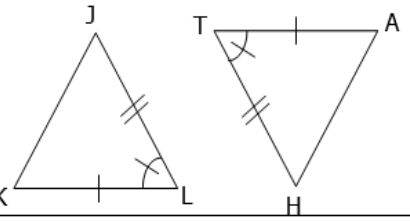
$\triangle ABC \cong \triangle$ _____ by _____

27.



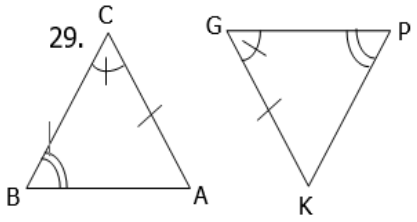
$\triangle DEF \cong \triangle$ _____ by _____

28.



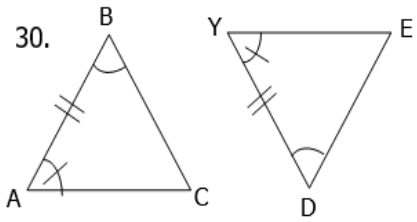
$\triangle JKL \cong \triangle$ _____ by _____

29.



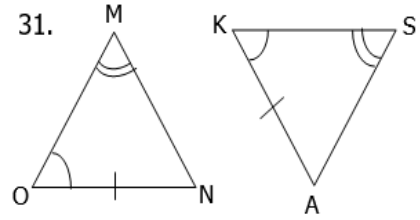
$\triangle ABC \cong \triangle$ _____ by _____

30.



$\triangle ABC \cong \triangle$ _____ by _____

31.



$\triangle MNO \cong \triangle$ _____ by _____