Chapter 1

1. Basic Geometry vocabulary and figure drawing.
   Draw the figure. You will need a protractor.
   a) $\angle ABC$ and $\angle CBD$ are a <u>linear pair</u>. The $m\angle ABC = 120°$. Find $m\angle CBD$.
   b) $\angle 1$ and $\angle 2$ are <u>adjacent</u> and <u>complementary</u>. The $m\angle 1 = 30°$. Find the $m\angle 2$
   c) $\angle A$ and $\angle B$ are <u>supplementary</u> but **not** adjacent. The $m\angle A = 80°$. Find the $m\angle B$
   d) $\angle APE$ so that it measures 100°. Add to the drawing $\overrightarrow{PT}$ so that $\overrightarrow{PT}$ bisects $\angle APE$. Label the measure of each of the smaller angles on the figure.
   e) Draw $\overrightarrow{AB}$ and $\overrightarrow{AC}$ intersecting at A such that A, B, and C are <u>not</u> collinear

2. Planes:
   a) Name a point that is coplanar with plane *CEB*.
   b) Name a point that is collinear with plane *GF*.
   c) What is the intersection of plane *CEF* and plane *ADC*?
   d) What is the intersection of plane *BHG*, plane *HGF*, plane *HBC*?
   e) What is the intersection of $\overline{BH}$ and $\overline{HE}$?
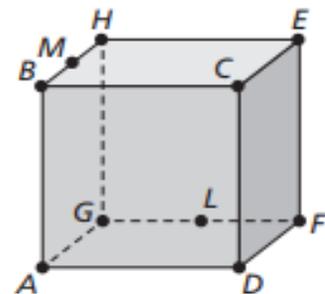

3. Consider $\triangle TAG$ with $T(1,2)\ A(1,6)\ G(4,2)$
   a) Graph the points and draw the triangle.
   b) Find the length of each side.
   c) Find the area and perimeter of the triangle.
   d) Is the triangle equilateral, isosceles or scalene?
   e) Is the triangle acute, right, obtuse

4. Consider the points $C(-1,2)$ and $G(1,6)$
   a) Find the midpoint of $\overline{CG}$.
   b) Find the slope of $\overline{CG}$.
   c) Find CG (the length of $\overline{CG}$)

5. $m\angle PRS = 98°$. Find $m\angle QRS$.
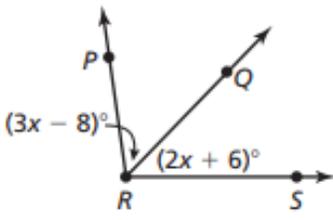
6. $\overrightarrow{BD}$ bisects $\angle ABC$. Find $m\angle ABC$.
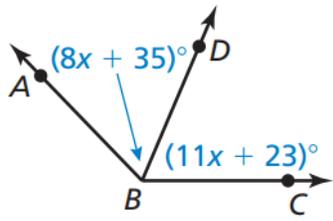
7. $\angle WXY$ and $\angle YXZ$ are supplementary angles.
   $m\angle WXY = (6x + 59)°$
   $m\angle YXZ = (3x - 14)°$

   Find $m\angle WXY$ and $m\angle YXZ$.

Chapter 2

8. Given: ***p*: the angle measures 110°**
   ***q*: the angle is obtuse**
   a) Write the conditional statement ($p \rightarrow q$)
   b) Write the converse statement.
   c) Write the inverse statement.
   d) Write the contrapositive statement.
   e) Determine the truth value of each (a) – (d).

9. Which of the following is a **counterexample** to the following false statement?

   If an animal can fly, then it is a bird.

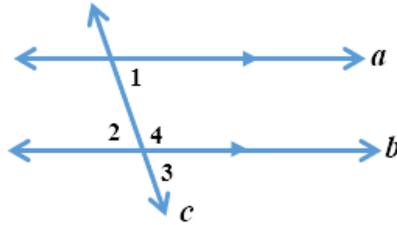   (a) airplanes   (b) crows
   (c) butterflies   (d) cats

10. Write the contrapositive:
    If the animal is a frog, then it is not a mammal.

11. Combine the two statements into a biconditional using "*if and only if*".
    Conditional: If an angle is acute then the angle measures less than 90°.
    Converse: If an angle measures less than 90°, then it is acute.

Chapter 3

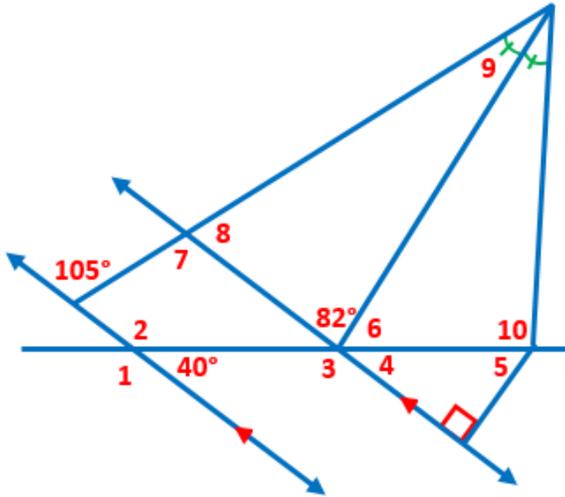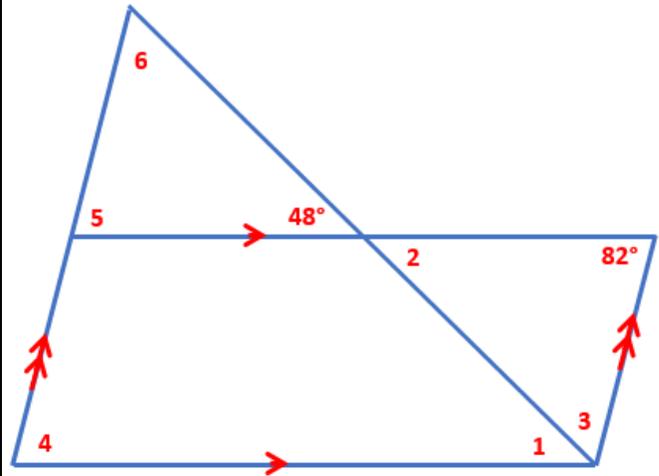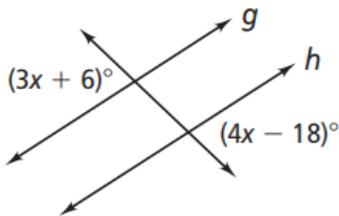| 12. State the correct word for each pair of angles. Choose from: vertical, linear pair, same-side interior, alternate interior, alternate exterior, and corresponding.	13. Using the digram at left, if $m\angle 1 = 70°$ then…
a) $\angle 1$ and $\angle 2$ b) $\angle 1$ and $\angle 3$ c) $\angle 3$ and $\angle 2$ d) $\angle 1$ and $\angle 4$ e) $\angle 3$ and $\angle 4$	a) $m\angle 2 = $ _____ b) $m\angle 3 = $ _____ c) $m\angle 4 = $ _____

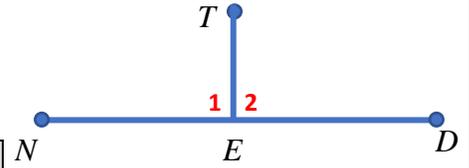| 14. Find the measure of each angle.	15. Find the measure of each angle.

16. If $g \parallel h$ find x.	17. Find x and y.	18. Find x and y.
$(3x + 6)°$ $(4x - 18)°$	$(3x - 15)°$ $68°$ $2x°$ $y°$	$(11x + 18)°$ $(9x + 8y)°$ $(7x)°$ $(4y + 3)°$
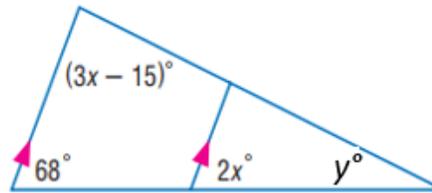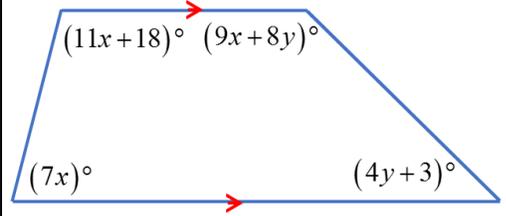
19.

Given: $\angle 1$ and $\angle 2$ are supplementary; **Prove**: $\angle 1 \cong \angle 2$
$\overline{TE} \perp \overline{ND}$

	Statements	Reasons
1	$\angle 1$ and $\angle 2$ are supplementary	
2	$m\angle 1 + m\angle 2 = 180°$	
3	$\overline{TE} \perp \overline{ND}$	
4	$m\angle 1 = 90°$	
5	$90° + m\angle 2 = 180°$	
6	$m\angle 2 = 90°$	
7	$m\angle 1 = m\angle 2$	
8	$\angle 1 \cong \angle 2$	

Choices:
Definition of Congruence
Given
Definition of Supplementary
Definition of Perpendicular
Substitution Property of Equality
Substitution Property of Equality
Subtraction Property of Equality
Given