AG. 1 GEOMETRY

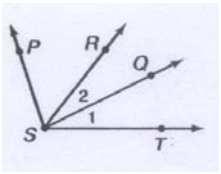
BLUE: Quiz 2

Name: _____
Core: _____
Date: _____

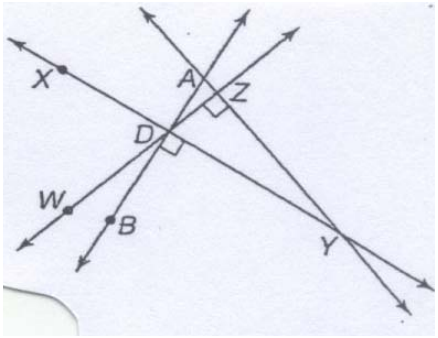
Goal 2: Analyze and solve problems involving geometric relationships

Section 1: Special Angle Pairs and the Angle Addition Postulate

1. Find $m\angle PSR$ if $\overrightarrow{SQ}$ and $\overrightarrow{SR}$ bisect $m\angle RST$ and $m\angle PST$, respectively, $m\angle 1 = 5x - 11$, and $m\angle 2 = 3x + 5$.



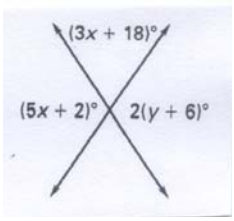
2. In the figure, $\overleftrightarrow{AB} \perp \overleftrightarrow{XY}$ and $\overleftrightarrow{WZ} \perp \overleftrightarrow{AY}$.



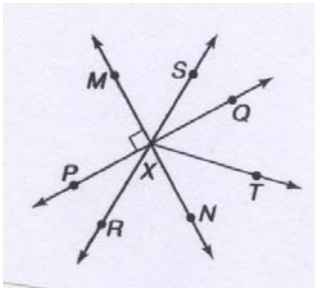
A. Name two angles that are complementary to $m\angle ADZ$.

B. Name two different angles that are supplementary to $m\angle BDW$.

3. Solve for y.



4. If $\overrightarrow{XT}$ bisects $m\angle QXN$ and $m\angle SXQ = 30$, find the measure of each of the obtuse angles that have $\overrightarrow{XM}$ as one of their sides.



5. Given that $\angle 1$ is not a right angle, $\angle 1$ and $\angle 2$ form a linear pair, $\angle 3$ and $\angle 4$ form a linear pair, and $\angle 1$ and $\angle 3$ are vertical angles. Which statement below is *not* true?

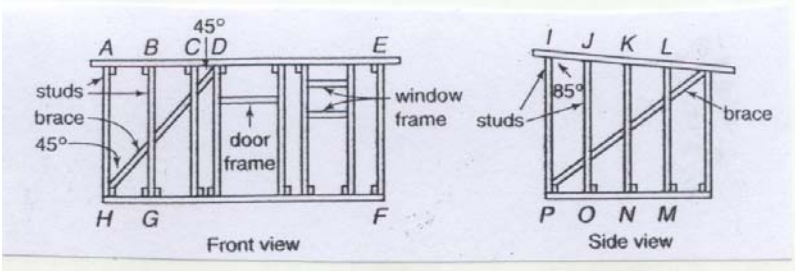
A. $m\angle 1 + m\angle 2 = 180^0$
B. $m\angle 3 + m\angle 4 = 180^0$
C. $\angle 2 \cong \angle 4$
D. $m\angle 2 + m\angle 4 = 180^0$
E. $\angle 1 \cong \angle 3$

6. Suppose $\angle AXB$, $\angle BXC$, and $\angle CXA$ are congruent angles in the same plane with no common interior points. If the sum of their measures is 360 and $\overrightarrow{XY}$ is the bisector of $\angle AXB$, which of the following is true?

   A. $\angle AXY \cong \angle BXC$
   B. $\angle BXC \cong \angle BXY$
   C. $\overrightarrow{XC}$ And $\overrightarrow{XY}$ are opposite rays
   D. $\angle AXC$ and $\angle YXB$ are vertical angles

Section 2: Parallel Lines and Transversals

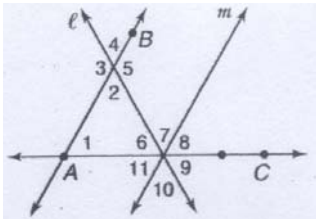
7. Horatio is building a shed. The framing diagram for the shed is shown below.



A. Looking at the side view, is the roof line parallel to the floor? Explain how you know.

B. What is the measure of $\angle KJO$? Explain how you know?

8. Refer to the figure. State the transversal that forms each pair of angles. Then, identify the special angle pair name.



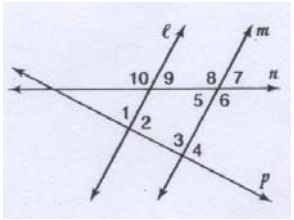
A. $\angle 5$ and $\angle 7$ ___ _____

B. $\angle 1$ and $\angle 8$ ___ _____

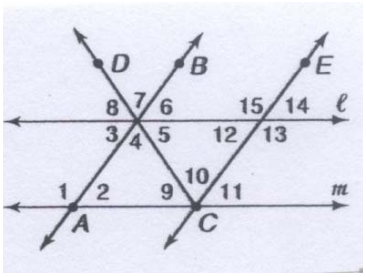
C. $\angle 4$ and $\angle 10$ ___ _____

9. Refer to the figure for the following question.

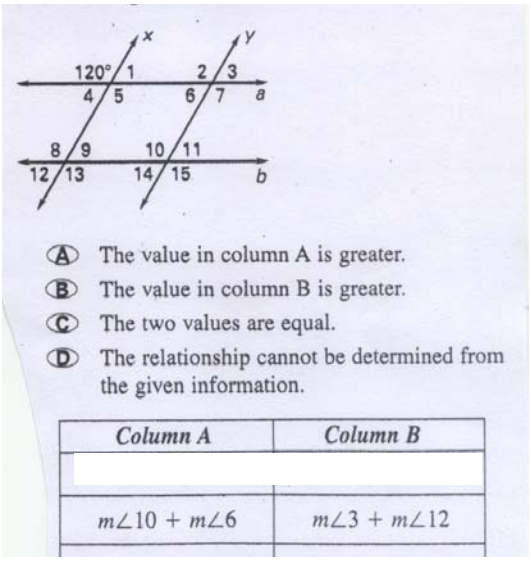
Given $l \parallel m$, $m\angle 9 = 9x + 5$, and $m\angle 5 = x + 37$, find the value of x.



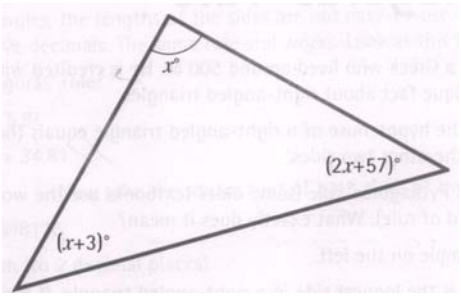
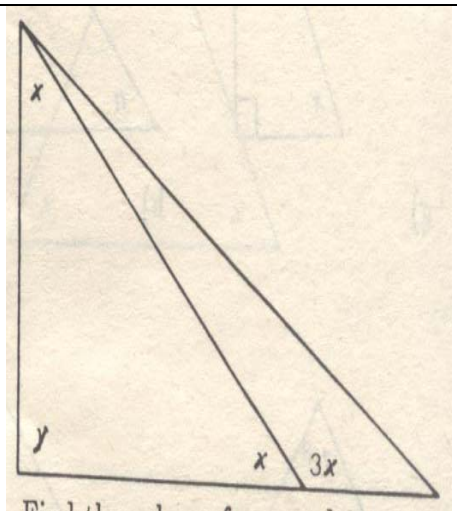
10. In the figure, $l \parallel m$, $\overleftrightarrow{AB} \parallel \overleftrightarrow{CE}$, $\overrightarrow{CD}$ bisects $\angle ACE$, and $m\angle 1 = 130$. Find the measure of $\angle 9$. Explain the reasoning that leads you to your answer.



11. In the following problem, use the diagram below where $a \parallel b$ and $x \parallel y$. Choose the statement that is true about the given values. Explain your choice.



Section 3: **Triangles**

12.		Find the measure of all three angles
13.		• Name the three interior angles of the shaded triangle and its exterior angle. Label the angles on the diagram • Find the measure of x and y. Record the sizes of all three angles of the shaded triangle. • Make a concluding statement to summarize your observations.

Section 4: **Problem Solving**

Solve the following problems. Use the space on the right to show all necessary work.

14.	When the measure of an angle's supplement and complement are added, the sum is 110. Find the measure of the angle.	
15.	The measure of two vertical angles is $\frac{1}{2}y$ and y-39. Find the measure of the angles.	

Section 5: **Constructions**

16. On a piece of printer paper,

A. Use your protractor to draw an angle of 148°.
B. Construct an angle congruent to it.
C. Bisect the angle.
D. Name the bisected angle and its bisector.
E. Measure each of the smaller angles with your protractor.
F. Write a mathematical statement that describes a relationship seen in your construction.

Don't forget to staple your printer paper to your assessment !!!