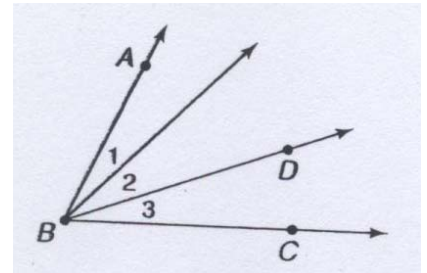# AG. 1 GEOMETRY

GREEN: Quiz 2

Name: _____
Core: _____
Date: _____

Goal 2: Analyze and solve problems involving geometric relationships
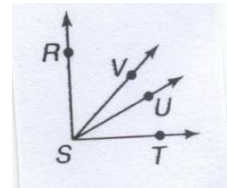
Section 1: Special Angle Pairs and the Angle Addition Postulate

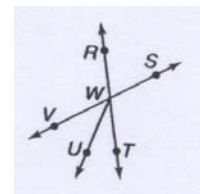1. Find $m\angle DBC$ if $m\angle 1 = 20$, $m\angle 2 = 25$, and $m\angle ABC = 65$.

2. Find the value of x if $m\angle 1 = 20$, $m\angle 2 = 20 + 3x$, $m\angle 3 = 20$, and $m\angle ABC = 20 + 23x$.

3. In the figure, $m\angle RST$ is a right angle. If $\overrightarrow{SV}$ bisects $m\angle RST$ and $m\angle VSU = 18$, find $m\angle UST$.
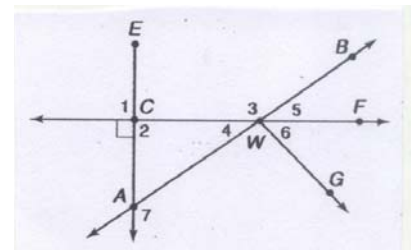
4. $\overrightarrow{WR}$ and $\overrightarrow{WT}$ are opposite rays, as are $\overrightarrow{WS}$ and $\overrightarrow{WV}$. Which angle forms a linear pair with $\angle TWU$?
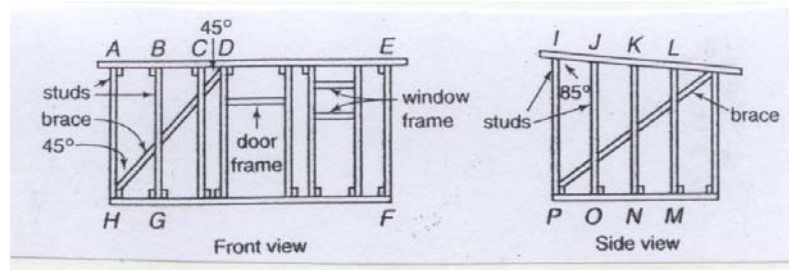
   _____

5. A. Which numbered angles appear to be obtuse? _____

   B. Name the angle pair of $\angle 5$ and $\angle 6$ _____

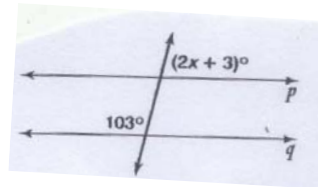## Section 2: Parallel Lines and Transversals

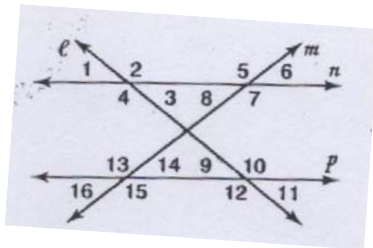6. Horatio is building a shed. The framing diagram for the shed is shown below.

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?

7. Find the value of x so that $p \parallel q$.

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

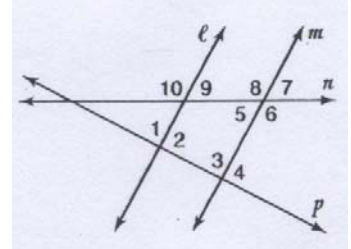A. $\angle 4$ and $\angle 9$ _____   _____

B. $\angle 2$ and $\angle 10$ _____   _____

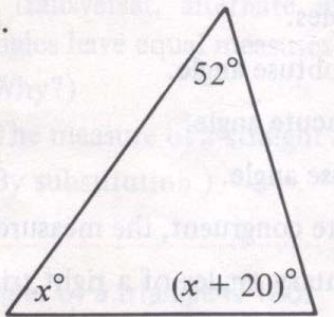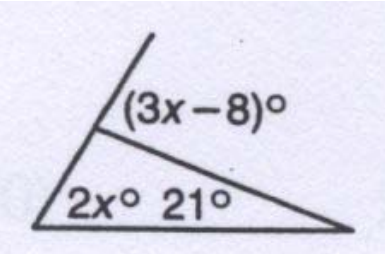C. $\angle 5$ and $\angle 15$ _____   _____

11. Refer to the figure for the following questions

A. Given $l \parallel m$ and $m\angle 2 = 95$, find $m\angle 3$.

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

Section 3: Triangles

12.		Find the measure of all three angles
13.		Find the measure of the three angles of the triangle.

Section 4: Problem Solving

- **In nature**

14. In the picture of the snowflake above, $\overrightarrow{FN}$ bisects $\angle AFL$ and $m\angle AFL = 120°$. Find:

		Solution	Justification
a.	$m \angle 1$		
b.	$m \angle 2$		
c.	$m \angle 3$		

15. The difference of the measure of two angles is $100°$. The one angle is 10 less than triple the other angle's measure. Find the measure of each angle.

16. Angles $\angle PQR$ and $\angle TQS$ are vertical. $m \angle PQR = 3x + 20$ and $\angle TQS = 8x - 5$.

Find the measure of:

a.	$\angle PQR$	
b.	$\angle TQS$	
c.	the measure of the supplement of $\angle TQS$	

Section 5: Constructions

17. 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 !!!