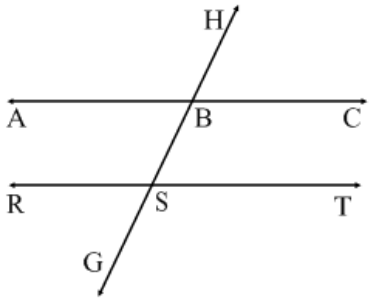
Quiz 1.3 Study Guide **KEY**

1. In the diagram below, $\overline{AC}||\overline{RT}$ and both lines are intersected by transversal $\overline{GH}$ *B* and *S*.



   a. If $m\angle HBC = 67°$, explain why the measure of angle *RSG* is 67°.

      If two parallel lines are cut by a transversal, the alternate exterior angles are congruent

   b. If $m\angle ABS = 62°$, find $m\angle RSB$.

      118°

   c. If $m\angle CBS = 115°$, find $m\angle TSG$.

      115°

   d. If $m\angle HBA = 120°$, explain why the measure of angle *RSG* is 60°.

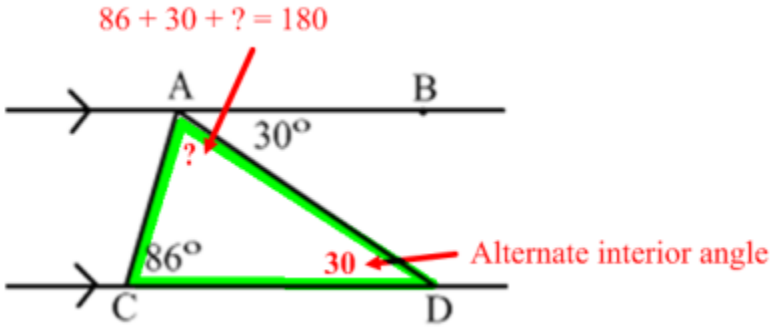
      If two parallel lines are cut by a transversal, the same side exterior angles are supplementary.

   e. If $m\angle TSG = (3x + 17)°$ and $m\angle CBS = (4x - 13)°$, find *x*.

      3x + 17 = 4x -13

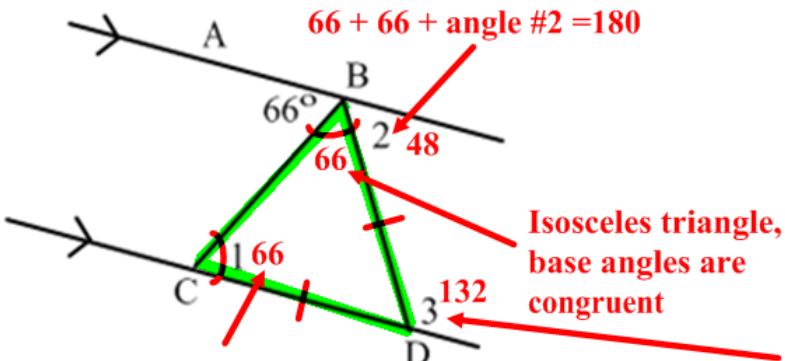
      x = 30

2. In the accompanying diagram, $\overline{AB} \parallel \overline{CD}$, $m\angle DAB = 30°$ and $m\angle ACD = 86°$. Find $m\angle CAD$.



2. **64**

3. Using the diagram below, $\overline{AB} \parallel \overline{CD}$, $\overline{BD} \cong \overline{CD}$, and $m\angle ABC = 66°$. Find the measures of angles 1, 2 and 3.



66 + 66 + angle #2 =180

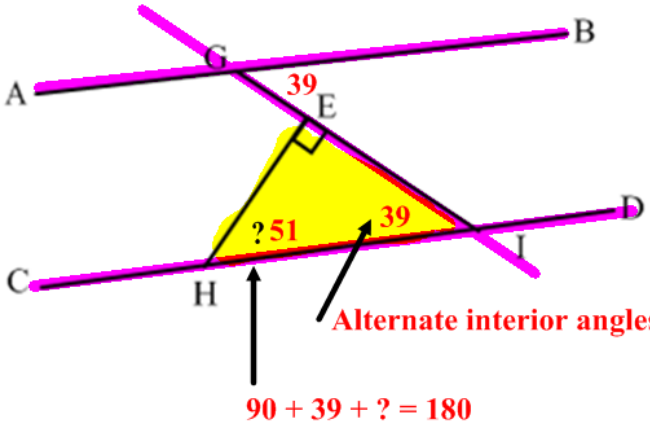
Isosceles triangle, base angles are congruent

Alternate interior angles are congruent

Same side interior angles are supplementary

3. $m\angle 1$ = _66___ $m\angle 2$ = _48__ $m\angle 3$ = __132__

4. In the diagram below, $\overline{AB} \parallel \overline{CD}$, $\overline{GI} \perp \overline{EH}$ at E, and $m\angle BGI = 39°$. Find $m\angle EHI$.



Alternate interior angles

90 + 39 + ? = 180

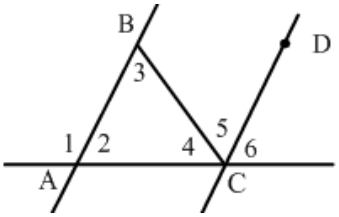
4.___51_____

5. Given: $\overline{AB} \parallel \overline{CD}$, $\overline{AC} \cong \overline{BC}$

a. Explain why $m\angle 1 = m\angle 3 + m\angle 4$.

Exterior angle equals the sum of the two remote interior angles

b. If $m\angle 2 = 80°$, explain why $m\angle 6 = 80°$.



If two parallel lines are cut by a transversal, the corresponding angles are congruent.

c. Explain why $\angle 2 \cong \angle 3$

Base angles of an isosceles triangle are congruent