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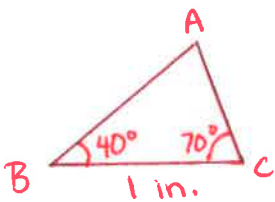
Period: _____

Shapes and Designs RETAKE PRACTICE

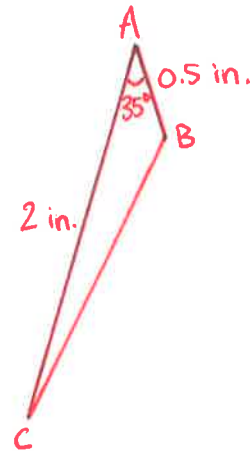
Standard 7.G.2: Draw, with ruler and protractor, triangles with given conditions.

Using a ruler and protractor/angle ruler, draw and label the triangle with the following properties.

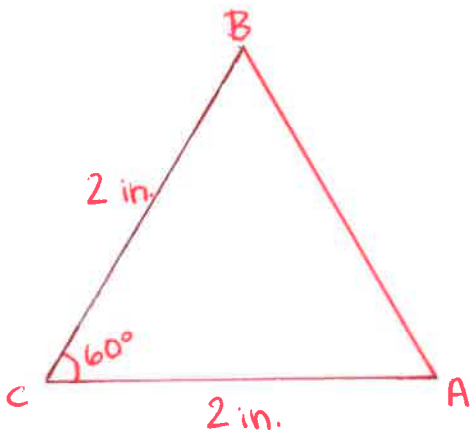
1. $\angle ABC = 40^\circ$, $\angle BCA = 70^\circ$, and $\overline{BC} = 1$ in.



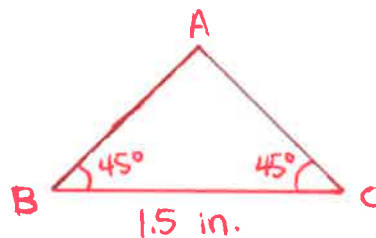
2. $\overline{AB} = 0.5$ in., $\angle CAB = 35^\circ$ and $\overline{AC} = 2$ in.



3. $\angle BCA = 60^\circ$, $\overline{BC} = 2$ in., and $\overline{AC} = 2$ in.



4. $\angle ABC = 45^\circ$, $\angle BCA = 45^\circ$, and $\overline{BC} = 1.5$ in.



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Shapes and Designs RETAKE PRACTICE**Standard 7.G.2:** Identify when the conditions determine a unique triangle, more than one triangle or no triangle.

1. A triangle has sides of 12 and 35. The measurement of the longest side is missing.

Ted says that one possibility for the unknown side length is 40. Do you agree with Ted? Why or why not?

Yes, because the sum of the two shorter sides must be greater than the longest side in a triangle, and $12 + 35 > 40$.

2. A triangle has sides of 12 and 35. The measurement of the longest side is missing.

Ted says that one possibility for the unknown side length is 50. Do you agree with Ted? Why or why not?

No, because the sum of the two shorter sides must be greater than the longest side in a triangle, and $12 + 35 < 50$.

3. Is a triangle with angle measures 55° , 25° , and 110° possible? Explain why or why not.

No, a triangle must have an angle sum of 180° , and $55^\circ + 25^\circ + 110^\circ \neq 180^\circ$.

4. Is a triangle with angle measures 50° , 35° , and 95° possible? Explain why or why not.

Yes, a triangle must have an angle sum of 180° , and $50^\circ + 35^\circ + 95^\circ = 180^\circ$.

5. A triangle has a 60° angle, a 60° angle and a side 2 centimeters in length.

Select True or False for each statement about this type of triangle.

Statement	True	False
The triangle must be an equilateral triangle.	X	
More than one triangle can be made with these measures.		X
The triangle must contain an angle measuring 75° .		X

6. A triangle has a 40° angle, a 120° angle and a side 2.5 centimeters in length.

Select True or False for each statement about this type of triangle.

Statement	True	False
The triangle must be an isosceles triangle.		X
More than one triangle can be made with these measures.	X	
The triangle must contain an angle measuring 20° .	X	

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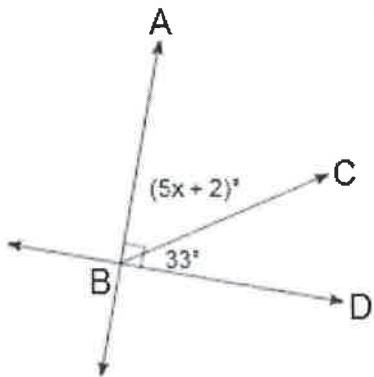
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Shapes and Designs RETAKE PRACTICE

Standard 7.G.5: Use facts about supplementary, complementary, vertical, and adjacent angles to write and solve simple equations for an unknown angle in a figure.

For each problem, write and solve an equation to find the value of x . Then, use that value to find the measure of $\angle ABC$. The diagrams are not to scale.

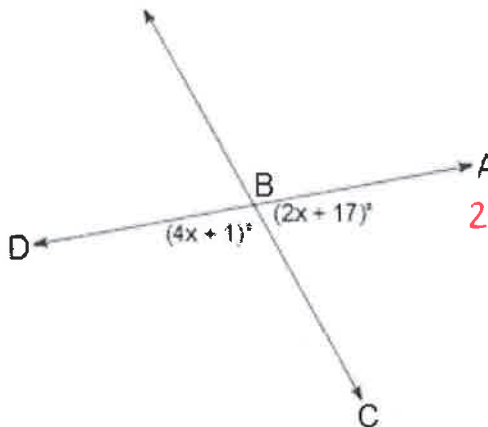
1. $\angle ABC = 5 \cdot 11 + 2 = 57^\circ$



$$\begin{array}{r} 90 \\ 33 \\ - 2 \\ \hline 55 \end{array}$$

$$\begin{array}{l} 5x = 55 \\ \div 5 \quad \div 5 \\ \hline x = 11 \end{array}$$

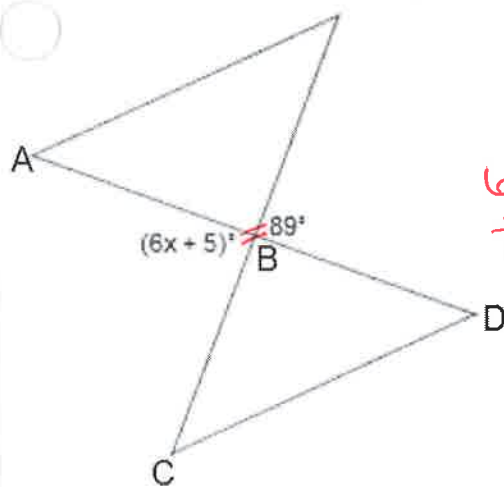
2. $\angle ABC = 2 \cdot 27 + 17 = 71^\circ$



$$\begin{array}{r} 180 \\ 17 \\ - 1 \\ \hline 162 \end{array}$$

$$\begin{array}{l} 2x + 4x = 162 \\ 6x = 162 \\ \div 6 \quad \div 6 \\ \hline x = 27 \end{array}$$

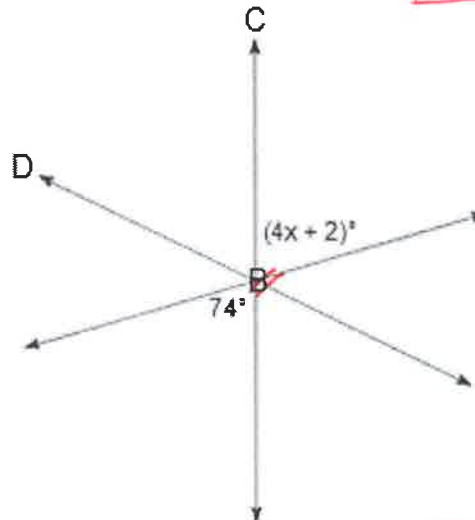
3. $\angle ABC = 6 \cdot 14 + 5 = 89^\circ$



$$\begin{array}{r} 89 \\ - 5 \\ \hline 84 \end{array}$$

$$\begin{array}{l} 6x = 84 \\ \div 6 \quad \div 6 \\ \hline x = 14 \end{array}$$

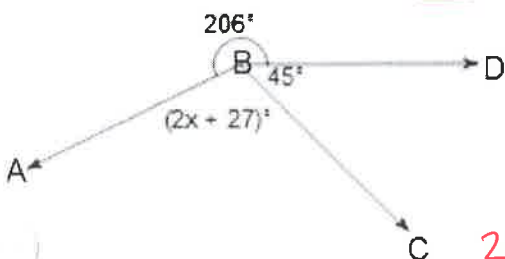
4. $\angle ABC = 4 \cdot 18 + 2 = 74^\circ$



$$\begin{array}{r} 74 \\ - 2 \\ \hline 72 \end{array}$$

$$\begin{array}{l} 4x = 72 \\ \div 4 \quad \div 4 \\ \hline x = 18 \end{array}$$

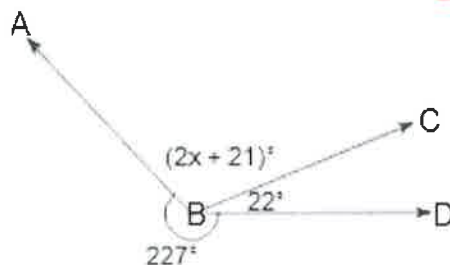
5. $\angle ABC = 2 \cdot 41 + 27 = 109^\circ$



$$\begin{array}{r} 360 \\ 206 \\ 45 \\ - 27 \\ \hline 82 \end{array}$$

$$\begin{array}{l} 2x = 82 \\ \div 2 \quad \div 2 \\ \hline x = 41 \end{array}$$

6. $\angle ABC = 2 \cdot 45 + 21 = 111^\circ$



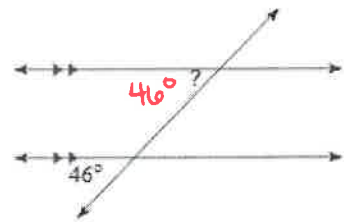
$$\begin{array}{r} 360 \\ 227 \\ 21 \\ - 22 \\ \hline 90 \end{array}$$

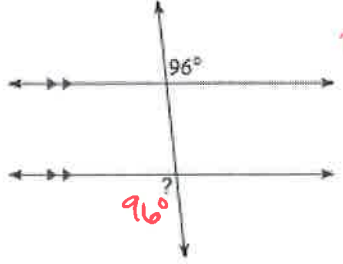
$$\begin{array}{l} 2x = 90 \\ \div 2 \quad \div 2 \\ \hline x = 45 \end{array}$$

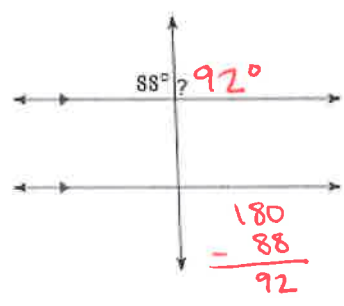
Shapes and Designs Unit Test Practice

Standard 8.G.5: Use informal arguments to establish facts about the angle sum and exterior angle of triangles and angles created when parallel lines are cut by a transversal.

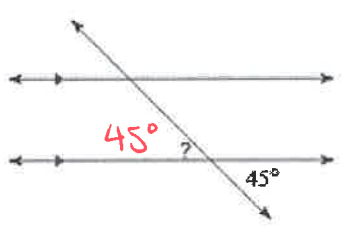
In the figures below, find the measures of angles labeled with a questions mark. Explain your reasoning.

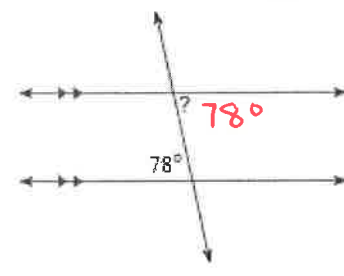
1.  **Because the angles are corresponding.**

2.  **Because the angles are alternate exterior.**

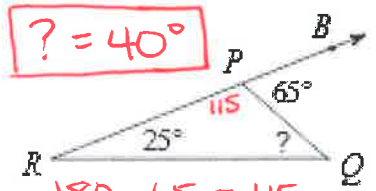
3.  **Because the angles are supplementary.**

$$\begin{array}{r} 180 \\ - 88 \\ \hline 92 \end{array}$$

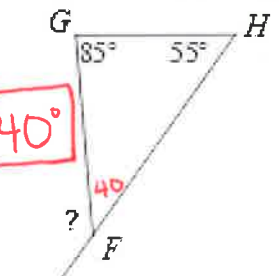
4.  **Because the angles are vertical.**

 **Because the angles are alternate interior.**

In the figures below, find the measure of the angles labeled with a question mark. Show your work and explain your thinking with words.

6. **? = 40°**

 $180 - 65 = 115$
 $180 - 115 - 25 = 40$

The interior and exterior angles are supplementary, and the interior angles of a triangle add to 180°.

7. **? = 140°**

 $180 - 85 - 55 = 40$
 $180 - 40 = 140$

The interior angles of a triangle add to 180°, and the interior and exterior angles are supplementary.