Interior Angles:

Exterior Angles:

Remote Interior Angles:

Find the measure of each angle.

3

\[ m \angle R \] __________

\[ m \angle S \] __________

\[ m \angle RQS \] __________

\[ m \angle J \] __________

\[ m \angle K \] __________

\[ m \angle JLK \] __________

Exterior Angle Theorem
The Exterior Angle Theorem states that the measure of an _________________ is equal to the sum of its ______________________.

\[ \angle 1 + \angle 2 = \angle 3 \]

Find the measure of each angle.

1. \( \angle ACB \) ___________
   \( \angle BCD \) ___________

2. \( \angle FHG \) ___________
   \( \angle GHJ \) ___________

Interior Angles:

Exterior Angles:

_____ & _____ are Remote Interior Angles to

Vocabulary
The Triangle Sum Theorem states that for \( \triangle ABC \),

\[
\angle A + \angle B + \angle C = 180°
\]

Find the measure of each angle:

1. \( \triangle XYZ \):
   - \( \angle X = 77° \)
   - \( \angle Y = 54° \)

2. \( \triangle DEF \):
   - \( \angle D = 115° \)
   - \( \angle F = 26° \)

3. \( \triangle STU \):
   - \( \angle S = 7x° \)
   - \( \angle T = 4x + 5° \)
   - \( \angle U = 6x + 5° \)

4. \( \triangle KJL \):
   - \( \angle K = 26x° \)
   - \( \angle J = 12x + 2° \)
   - \( \angle L = 6x + 2° \)

Triangle Sum Theorem
Angle Theorems for Triangles
Interior Angles:

Exterior Angles:

Remote Interior Angles:

Find the measure of each angle.

3. \[ m \angle R \quad 72^\circ \]
   \[ m \angle S \quad 63^\circ \]
   \[ m \angle RQS \quad 45^\circ \]

4. \[ m \angle J \quad 46^\circ \]
   \[ m \angle K \quad 54^\circ \]
   \[ m \angle JLK \quad 80^\circ \]

\[
18x + 15x + 3 = 135 \\
33x + 3 = 135 \\
33x = 132 \\
x = 4
\]

\[
7x + 4 + 9x = 100 \\
16x + 4 = 100 \\
16x = 96 \\
x = 6
\]
The **Exterior Angle Theorem** states that the measure of an exterior angle is equal to the sum of its remote interior angles.

\[ \text{m} \angle 1 + \text{m} \angle 2 = \text{m} \angle 4 \]

**Find the measure of each angle.**

1. \( \triangle ABC \)
   - \( \text{m} \angle ACB = 48^\circ \)
   - \( \text{m} \angle BCD = 132^\circ \)

2. \( \triangle GHJ \)
   - \( \text{m} \angle FHG = 26^\circ \)
   - \( \text{m} \angle GHJ = 154^\circ \)

**Interior Angles:**

- \( \angle 1 \)
- \( \angle 2 \)
- \( \angle 3 \)

**Exterior Angles:**

- \( \angle 4 \)

\( \angle 1 \) & \( \angle 2 \) are Remote Interior Angles to \( \angle 4 \)

**Vocabulary**
The Triangle Sum Theorem states that for any triangle, 

\[ m \angle 1 + m \angle 2 + m \angle 3 = 180^\circ \]

Find the measure of each unknown angle.

1. \( \triangle XYZ \)
   - \( 77^\circ + 54^\circ + x = 180^\circ \)
   - \( 131^\circ + x = 180^\circ \)
   - \( x = 49^\circ \)
   - \( m \angle Y = 49^\circ \)

2. \( \triangle EDF \)
   - \( 26^\circ + 115^\circ + x = 180^\circ \)
   - \( 141^\circ + x = 180^\circ \)
   - \( x = 39^\circ \)
   - \( m \angle F = 39^\circ \)

3. \( \triangle STU \)
   - \( 7x + 4x + 5 + 6x + 5 = 180 \)
   - \( 17x + 10 = 180 \)
   - \( 17x = 170 \)
   - \( x = 10 \)
   - \( m \angle S = 70^\circ \)
   - \( m \angle T = 45^\circ \)
   - \( m \angle U = 65^\circ \)

4. \( \triangle KJL \)
   - \( 26x + 12x + 2 + 6x + 2 = 180 \)
   - \( 44x + 4 = 180 \)
   - \( 44x = 176 \)
   - \( x = 4 \)
   - \( m \angle J = 104^\circ \)
   - \( m \angle K = 50^\circ \)
   - \( m \angle L = 26^\circ \)
Directions

Step 1: Print pages 1&2, and 3&4 front to back. I use the option on my printer double sided and to flip along the short edge. If you print single-sided first, then manually flip every other page. (The information should be facing in opposite directions)

Step 2: Cut along the dotted line to cut off the extra piece on the right side of the paper. If you photocopied this correctly, there should not be any problems in this area on the back side either.

Step 3: Line up the two pieces as shown:

![Triangle Sum Theorem Exterior Angle Theorem](image)

Step 4: Fold over the top portion and secure with a few staples. The final product should look like this:

![Angle Theorems for Triangles](image)