Investigating Angles in a Triangle
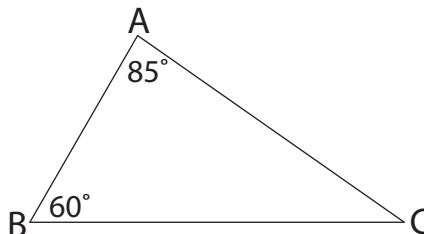
Quick Review

➤ The sum of the **interior angles** in a triangle is 180°.
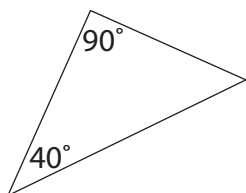
A
60°
B 74°   46° C
$60° + 74° + 46° = 180°$
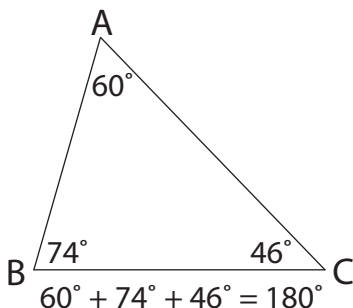
➤ To find the measure of ∠C in triangle ABC:
$∠A + ∠B + ∠C = 180°$
Since $∠A = 85°$ and $∠B = 60°$,
$85° + 60° + ∠C = 180°$
$145° + ∠C = 180°$
$180° − 145° = 35°$
So, the measure of ∠C is 35°.

A
85°
B 60°   C

Try These

1. Determine the measure of the third angle without measuring.

a)
90°
40°
_____

b)
120°
30°
_____

c)
53°
74°
_____
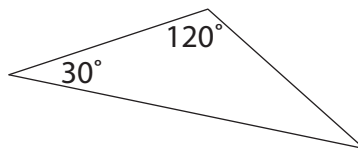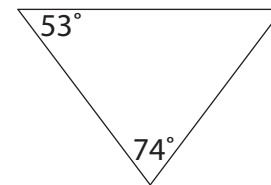
2. Two angles of a triangle are given.
Find the measure of the third angle.
Show your work.

a) 70°, 60° ____ _____

b) 25°, 90° ____ _____

c) 110°, 40° ____ _____

1. Determine if a triangle can be drawn with the angle measures given.
   If a triangle can be drawn, draw and label it.

   a) 35°, 65°, 80°   **b)** 55°, 50°, 50°   **c)** 45°, 45°, 90°   **d)** 95°, 45°, 50°

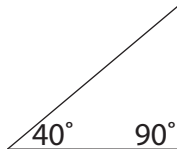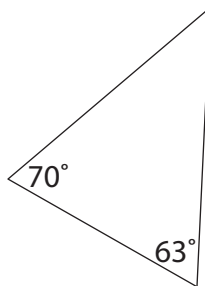2. Determine the measure of the third angle without measuring.

   a)   **b)**   **c)**

   40°   90°   70°   51°
                                            63°   69°

   _____   _____   _____
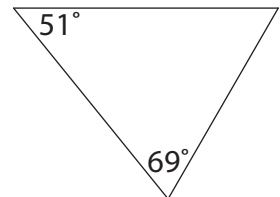
3. Two angles of a triangle are given.
   Find the measure of the third angle.

   a) 62°, 85° _____   **b)** 60°, 25° _____   **c)** 37°, 90° _____

   Stretch Your Thinking . . . .

Can you construct triangle DEF? Explain.

$\angle D = 109°$
$\angle E = 60°$
$\angle F = 12°$

_____

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