Angles, Triangles and Parallel Lines....Oh My!

Types of Triangles

Scalene Triangle   - a triangle with no equal sides and no equal angles

Isosceles Triangle   - a triangle with two sides equal, and two angles equal

Equilateral Triangle   - a triangle with all sides equal, and all angles equal

Triangle Task

Take a piece of paper and cut ANY size triangle from it.

In each corner, put a symbol or mark to show where the angle is located.

Tear the corners off of the triangle and arrange them so the points are all together.

What do you see? What conclusions can you make about the interior angles of a triangle? (measure with a protractor if necessary)
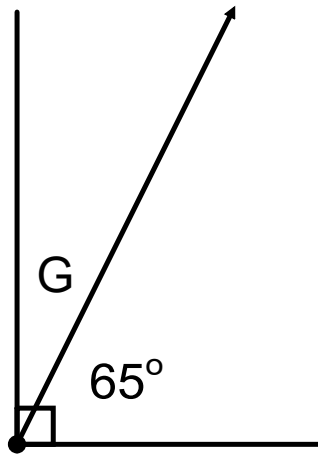
Geometers Sketchpad Animations #1 slide
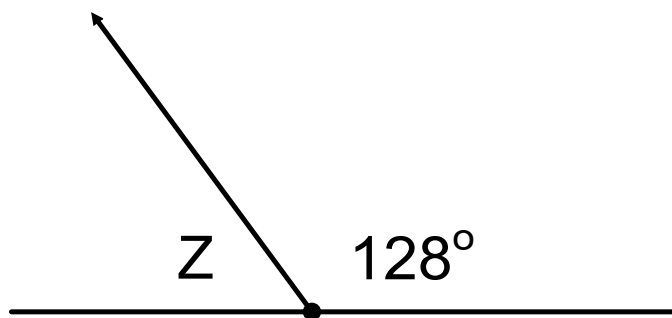
Find the missing angle in each triangle.

88°

60°   A

12°

B

16°
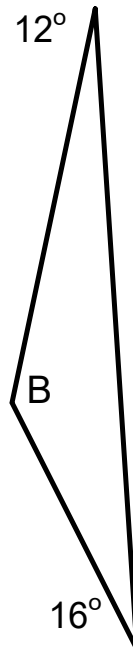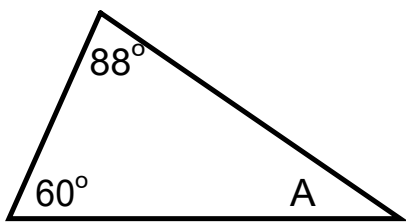
Complimentary Angles - sum for 90°

Equation Solution

G

65°

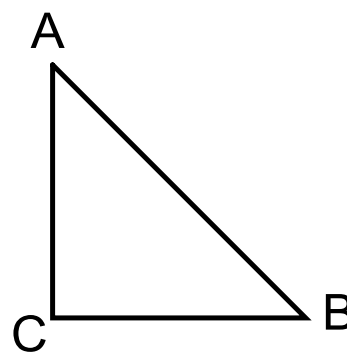Supplimentary Angles - sum for 180°

Z   128°

Equation Solution

Notation for Angles and Triangles

$\triangle ABC$

$\angle A = 30^o$ $\angle CAB = 30^o$

$\angle B = \underline{\quad}$ or $\angle CBA = \underline{\quad}$

$\angle C = 90^o$ $\angle ACB = 90^o$

Find ≤ABD for the following triangle:

A

32°

84°

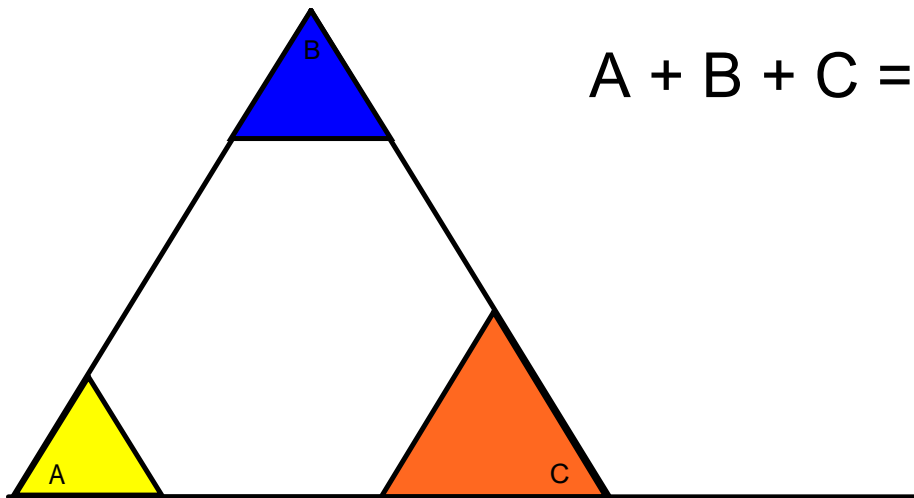C   B   D
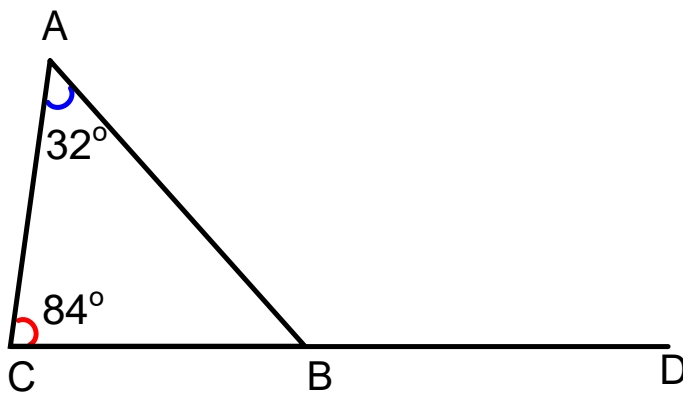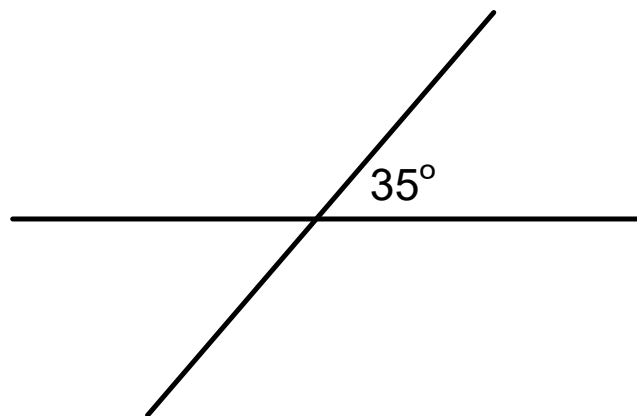
Geometers Sketchpad Animations #2 slide

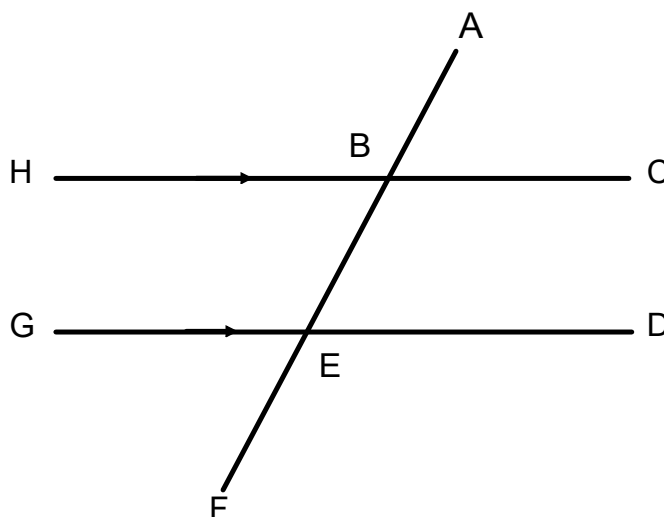# Exterior Angle of a Triangle
(A and B are infinitely cloned)

A + B + C =

Angles and Crossing Lines

35°

You may also know this as the Opposite Angle Theorem. (OAT)

Parallel Lines

$$\angle HBA = 110^{o}$$

$$\angle GEF = \underline{}$$

$$\angle DEF = \underline{}$$

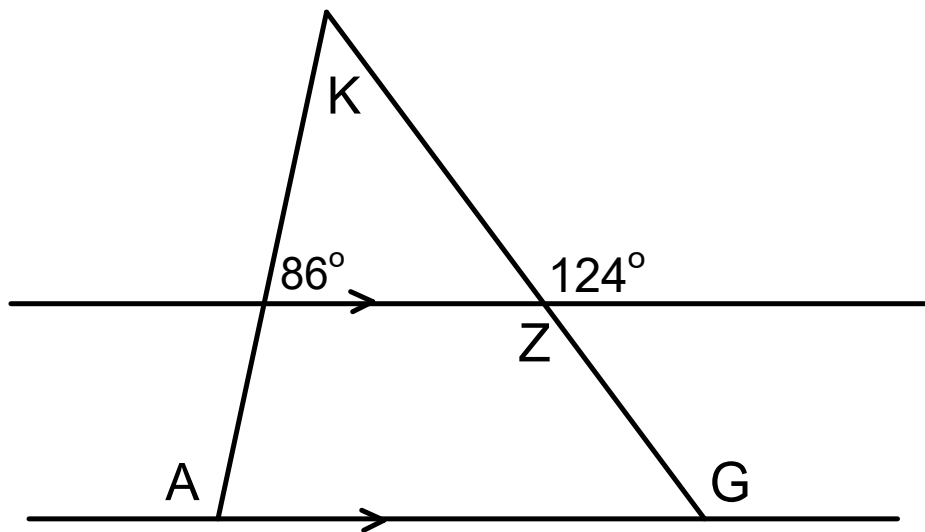Corresponding Angles are equal. "F" pattern.

Alternate angles are equal. "Z" pattern.

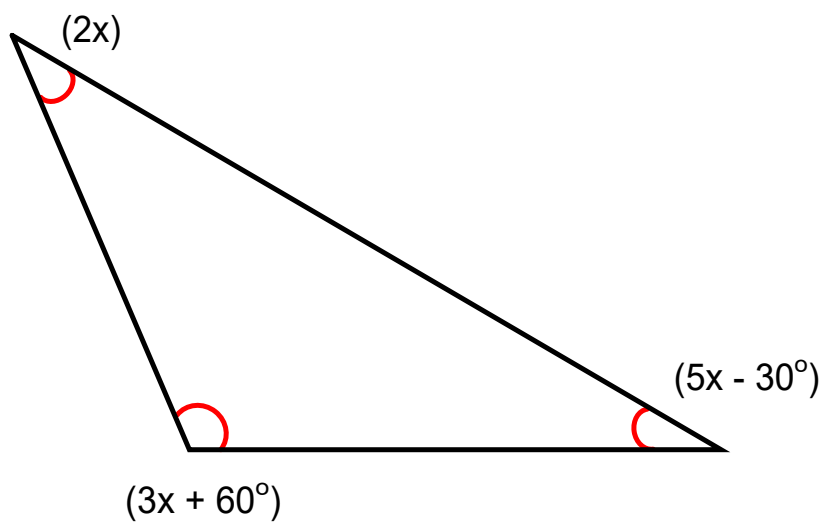The sum of the interior angles on the same side of the transversal is 180°. "C" pattern.

Geometers Sketchpad Animations

Find the missing angles.

Solve for "x"

(2x)

(5x - 30°)

(3x + 60°)

Consolidation Questions:

Grade 9 Academic - page 384-86 #1, 2, 3, 4, 5, 7

Attachments

SPECIALQUADS.GSP

TriangleAngles.gsp

Parallel.gsp