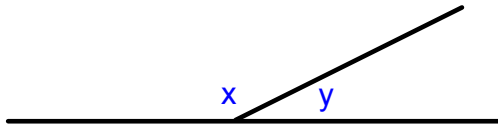


Unit 2 - Measurement and Geometry

7.1 Angle Relationships in Triangles

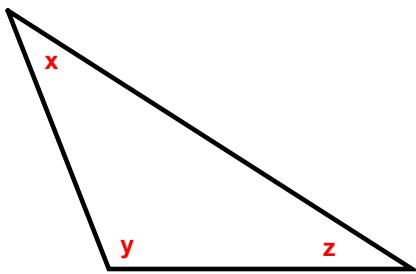
Review of Angle Properties - What you already know! :)

Angles that make a straight line have a **sum of 180°** :



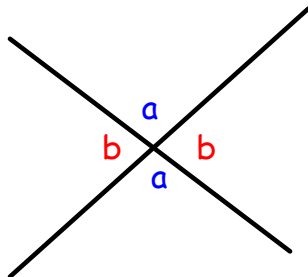
$$x + y = 180^\circ$$

The **sum of the interior angles of any triangle is 180°** :

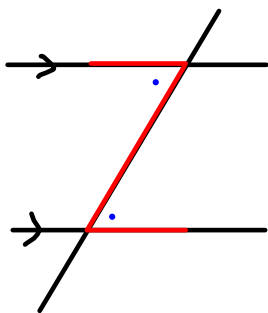


$$x + y + z = 180^\circ$$

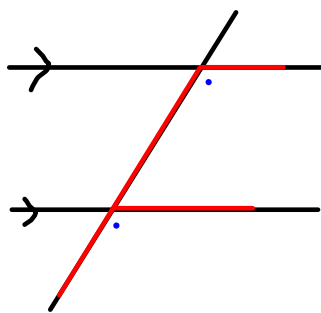
When two lines intersect, the **opposite angles are equal**:



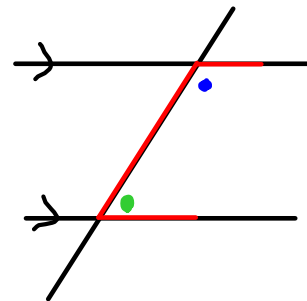
When a transversal crosses parallel lines, many pairs of angles are related:



alternate angles
are equal
(z pattern)

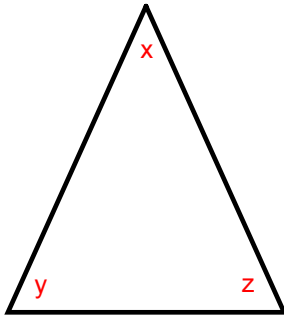


corresponding
angles are equal
(f pattern)



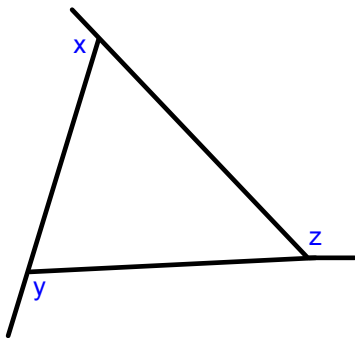
co-interior
angles have a
sum of 180°
(c pattern)

7.1 Angle Relationships in Triangles



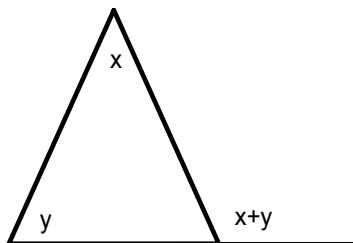
x, y, and z are **interior** angles

$$x + y + z = 180^\circ$$



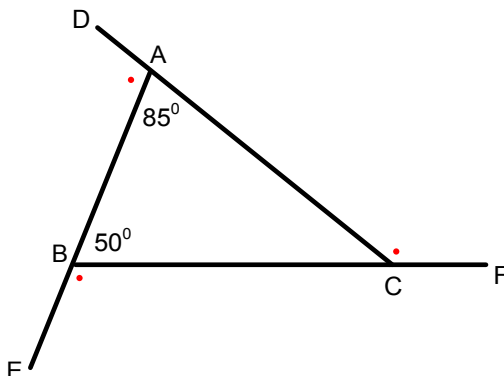
x, y and z are **exterior** angles (to draw an exterior angle, just extend one of the sides of the vertex; it doesn't matter which!)

$$x + y + z = 360^\circ$$



The exterior angle at each vertex of a triangle is equal to the sum of the interior angles of the other two vertices.

Ex. 1 Find the measures of the exterior angles of $\triangle ABC$



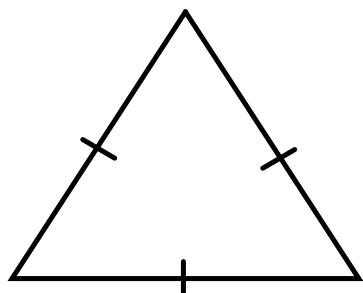
Do you remember how we name angles:

Where is angle ACB?

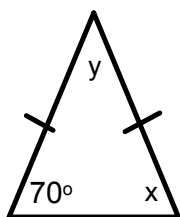
Where is angle DAB?

What are the names of the three exterior angles?

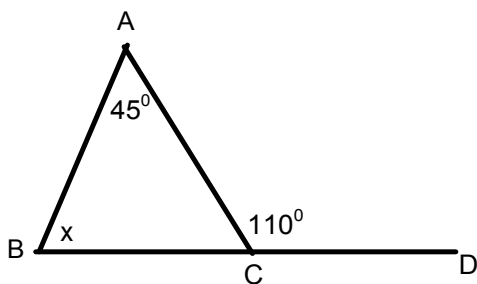
Ex. 2 What is the measure of each exterior angle of an equilateral triangle?



Ex. 3 Angles in an isosceles triangle:



Ex. 4 Find the measure of $\angle ABC$



Homework, page 371# 1a, 2a, 3, 4, 5, 6, 8, 9, 10