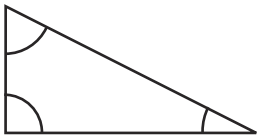
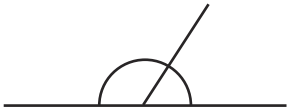
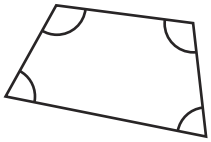
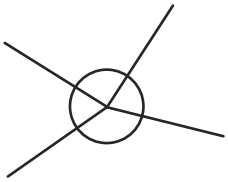
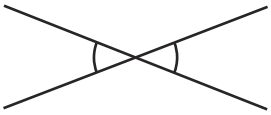
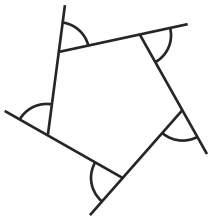
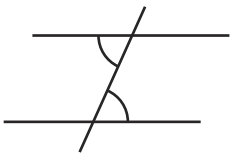
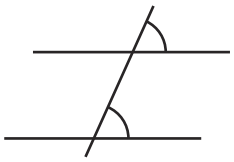
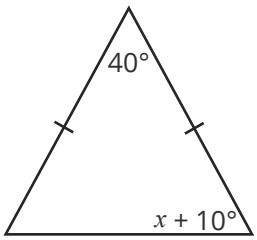
Angle Properties – Homework

These are the rules you need to know:

Angles in a triangle add to 180° 	**Angles on a straight line add to 180°** 
Angles in a quadrilateral add to 360° 	**Angles around a point add to 360°** 
Vertically opposite angles are equal 	**Exterior angles of a polygon add to 360°** 
Alternate angles are equal 	**Corresponding angles are equal** 

You will need to use these facts to form and solve equations.

Example:



In this diagram, we know that the angles in a triangle add to 180° and that two angles in an isosceles triangle are equal. This means that the unmarked angle is also x +10°.

Forming and solving the equation gives:

$$x + 10 + x + 10 + 40 = 180$$

$$2x + 60 = 180$$

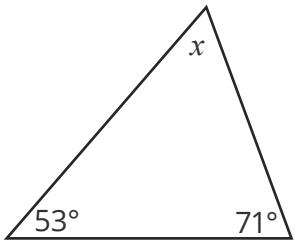
$$2x = 120$$

$$x = 60°$$

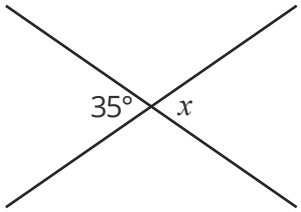
Your Turn

1. Find the missing angles, giving a reason for each:

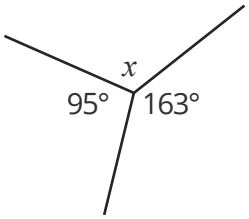
a.



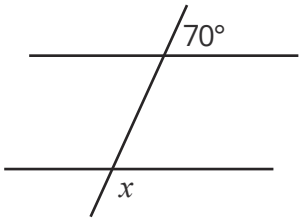
b.



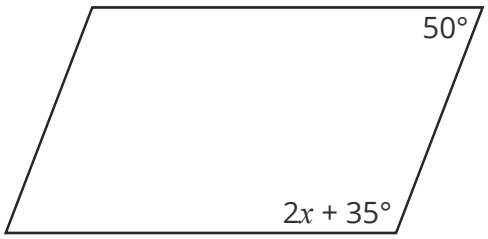
c.



d.



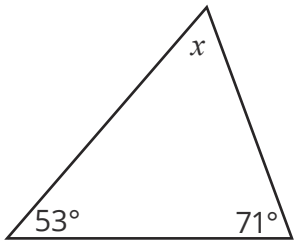
2. Form and solve an equation to find the value of the letter x.



Your Turn Answers

1. Find the missing angles, giving a reason for each:

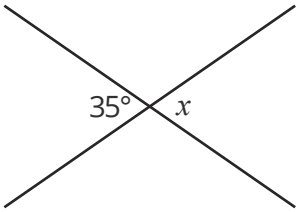
a.



x = 56°

Angles in a triangle add to 180°.

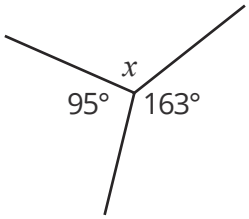
b.



x = 35°

Vertically opposite angles are equal.

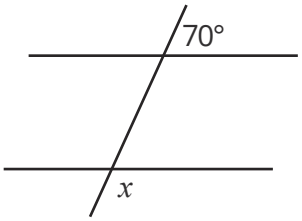
c.



x = 102°

Angles around a point add to 360°.

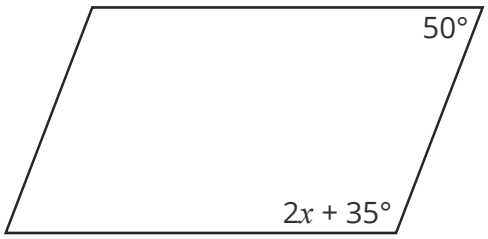
d.



x = 110°

Angles on a straight line add to 180° and corresponding angles are equal.

2. Form and solve an equation to find the value of the letter x.



$2x + 35 + 50 = 180$

$2x + 85 = 180$

$2x = 95$

$x = 47.5°$

Or similar method.