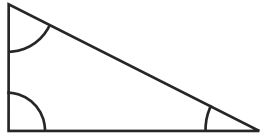
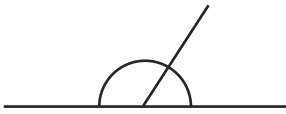
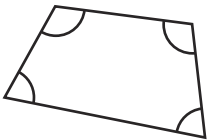
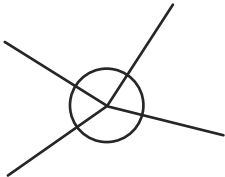
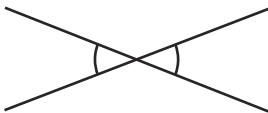
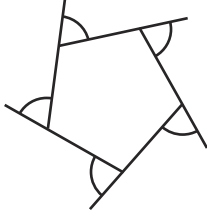
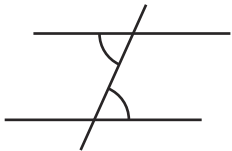
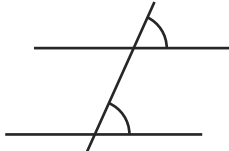


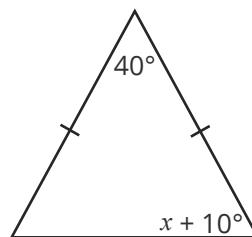
# Angle Properties – Homework

These are the rules you need to know:

<p><b>Angles in a triangle add to <math>180^\circ</math></b></p> 	<p><b>Angles on a straight line add to <math>180^\circ</math></b></p> 
<p><b>Angles in a quadrilateral add to <math>360^\circ</math></b></p> 	<p><b>Angles around a point add to <math>360^\circ</math></b></p> 
<p><b>Vertically opposite angles are equal</b></p> 	<p><b>Exterior angles of a polygon add to <math>360^\circ</math></b></p> 
<p><b>Alternate angles are equal</b></p> 	<p><b>Corresponding angles are equal</b></p> 

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  $180^\circ$  and that two angles in an isosceles triangle are equal. This means that the unmarked angle is also  $x + 10^\circ$ .

Forming and solving the equation gives:

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

$$2x + 60 = 180$$

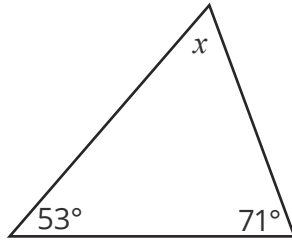
$$2x = 120$$

$$x = 60^\circ$$

**Your Turn**

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

a.




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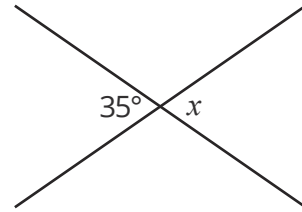


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b.




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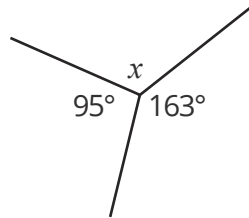


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c.




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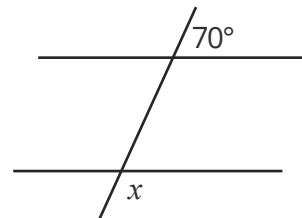


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d.




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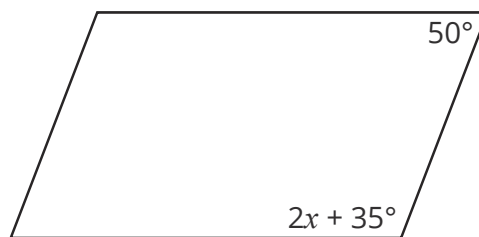


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2. Form and solve an equation to find the value of the letter  $x$ .




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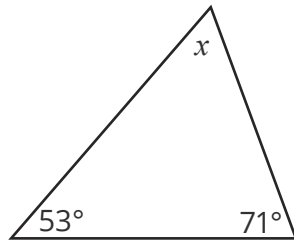


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**Your Turn Answers**

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

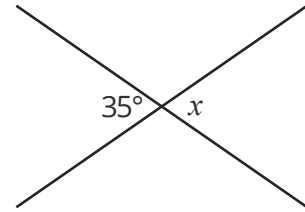
a.



$x = 56^\circ$

**Angles in a triangle add to  $180^\circ$ .**

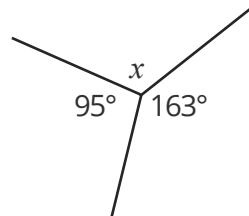
b.



$x = 35^\circ$

**Vertically opposite angles are equal.**

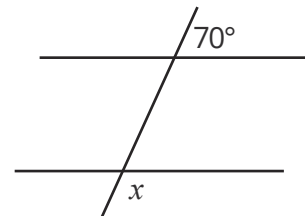
c.



$x = 102^\circ$

**Angles around a point add to  $360^\circ$ .**

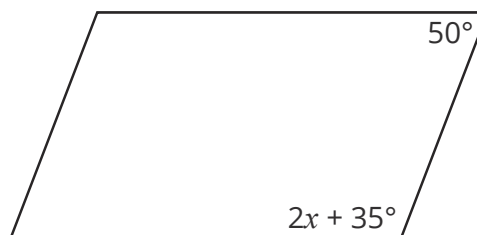
d.



$x = 110^\circ$

**Angles on a straight line add to  $180^\circ$  and corresponding angles are equal.**

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



$2x + 35 + 50 = 180$

$2x + 85 = 180$

$2x = 95$

$x = 47.5^\circ$

**Or similar method.**