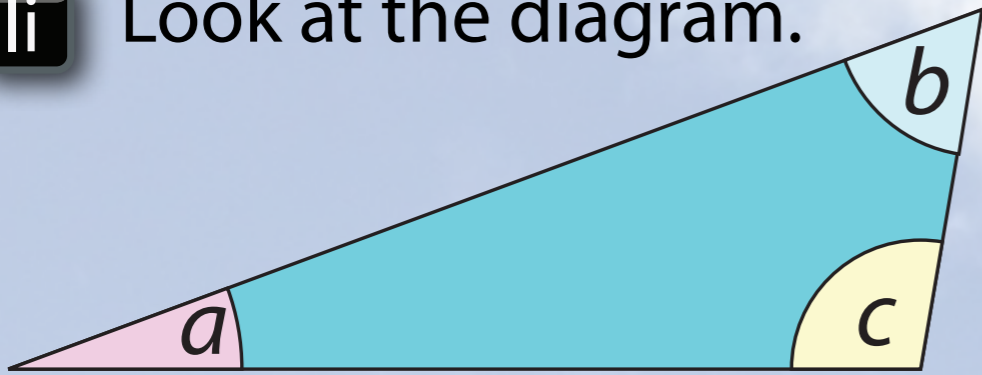


ii Look at the diagram.



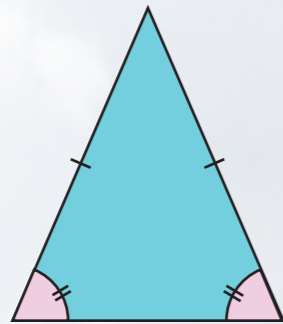
$$b = 3a$$

$$a + b + c = 180^\circ$$

a Continue the table:

$a$	$b$	$c$
$10^\circ$	$30^\circ$	$140^\circ$

b Can the triangle be isosceles?

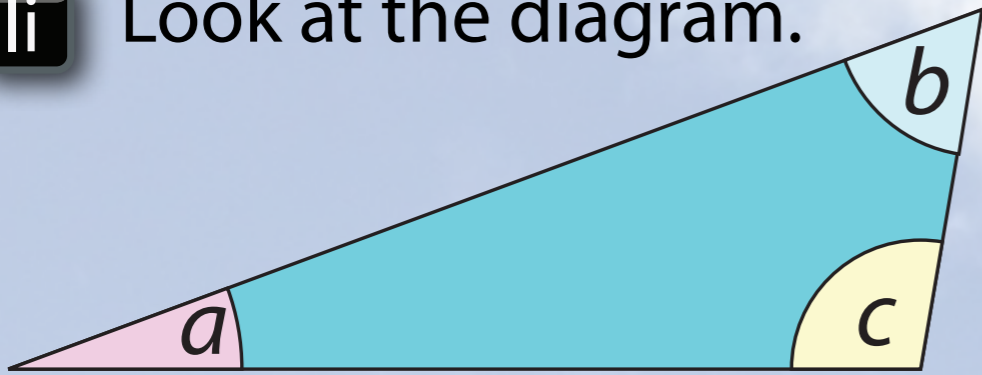


c Can the triangle be right-angled?





ii Look at the diagram.



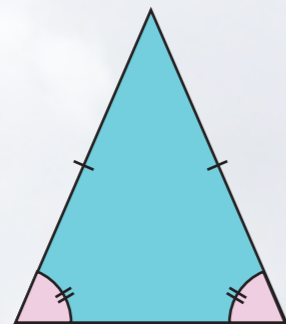
$$b = 3a$$

$$a + b + c = 180^\circ$$

a Continue the table:

$a$	$b$	$c$
$10^\circ$	$30^\circ$	$140^\circ$
$20^\circ$	$60^\circ$	$100^\circ$

b Can the triangle be isosceles?



$$36^\circ, 108^\circ, 36^\circ$$

c Can the triangle be right-angled?



$$30^\circ, 90^\circ, 60^\circ$$

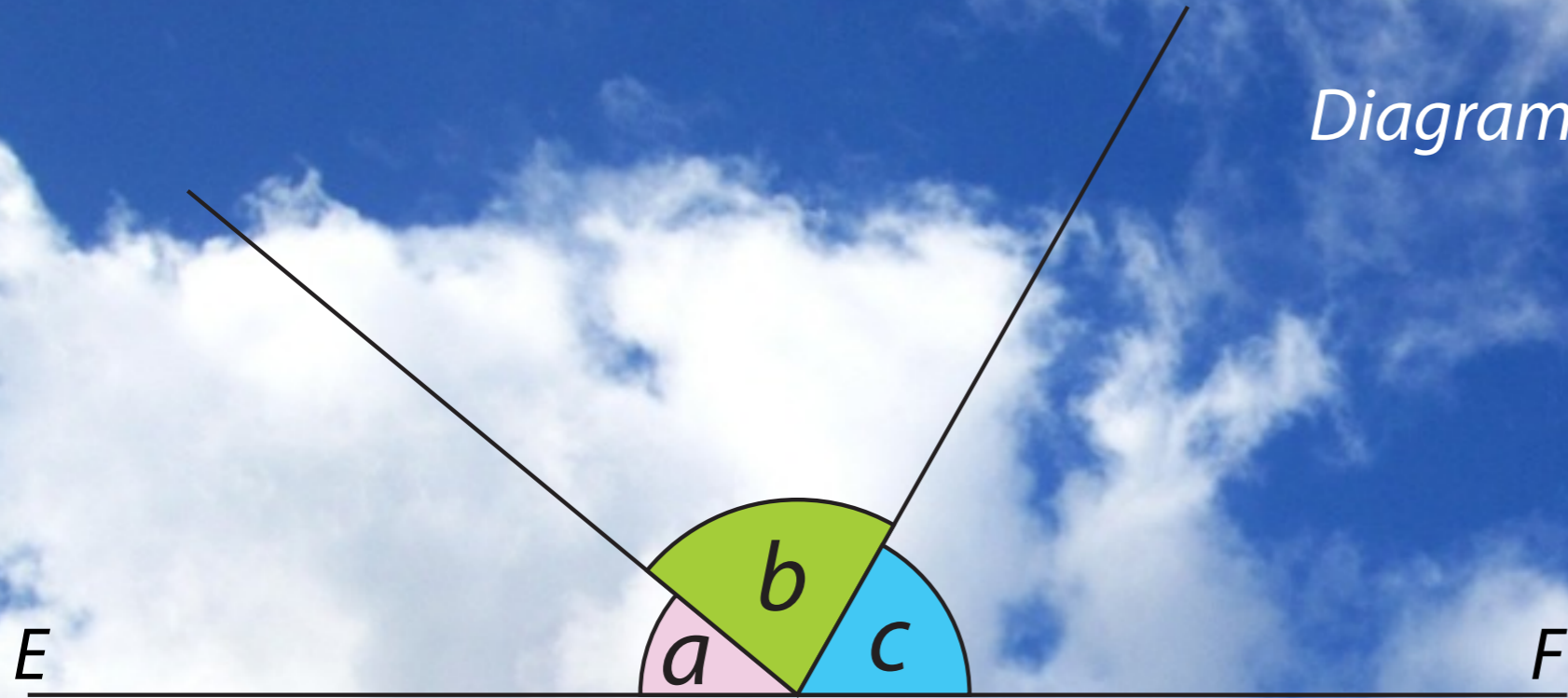
Answer





**f1**  $EF$  is a straight line.

*Diagram not to scale.*

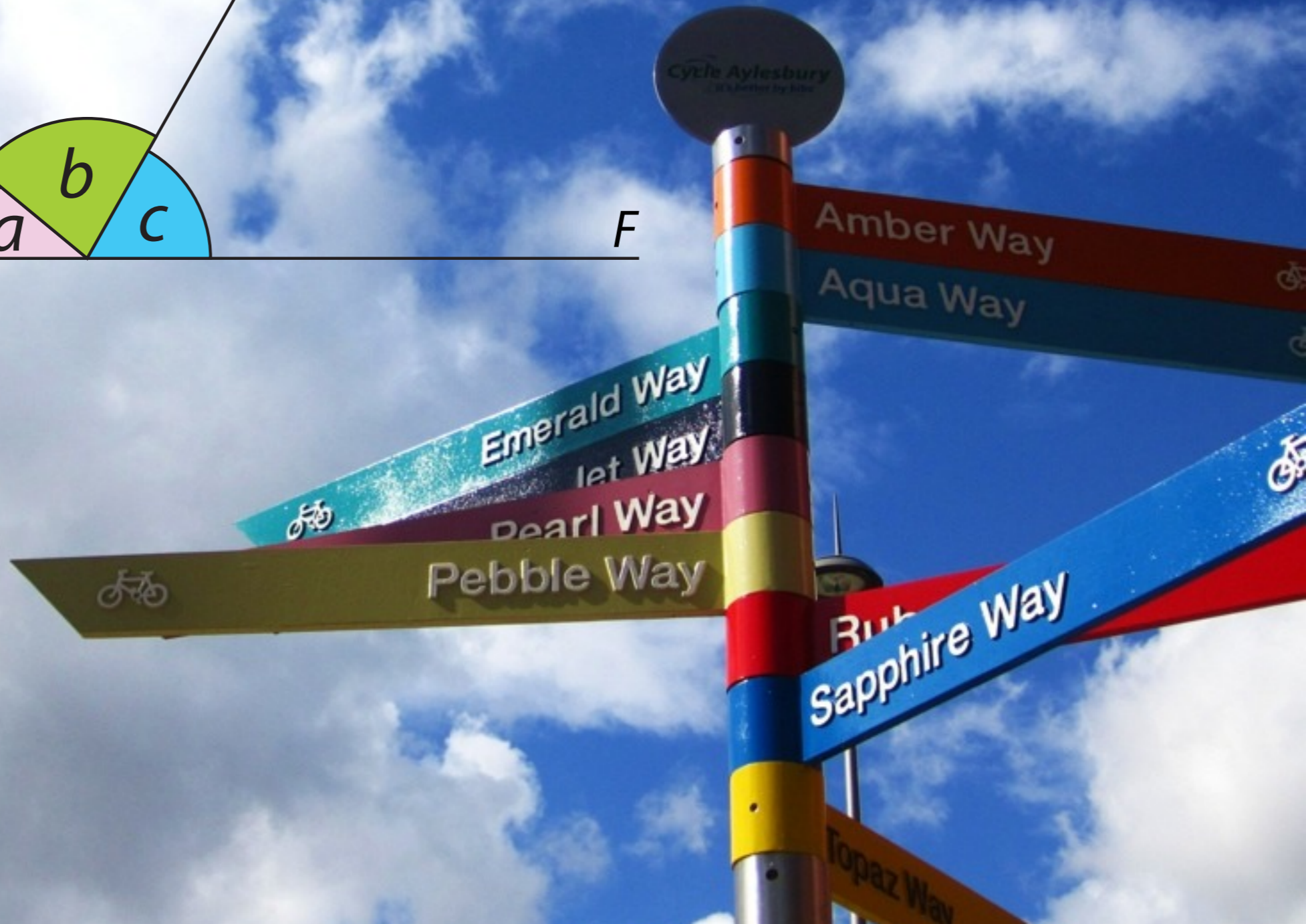


$b = 2a$

$a + b + c = 180^\circ$

Continue the table.

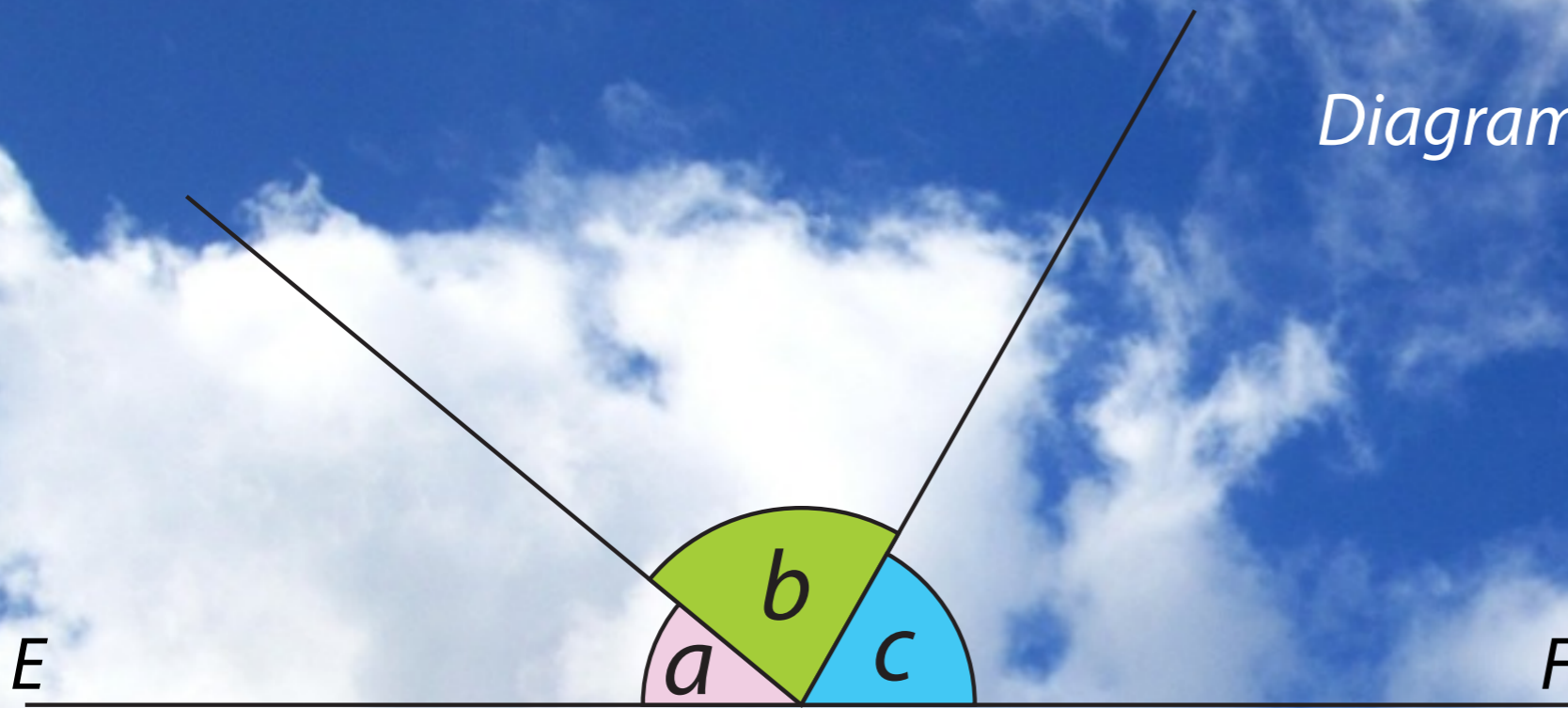
$a$	$b$	$c$
$20^\circ$	$40^\circ$	$120^\circ$





f1  $EF$  is a straight line.

*Diagram not to scale.*



$b = 2a$

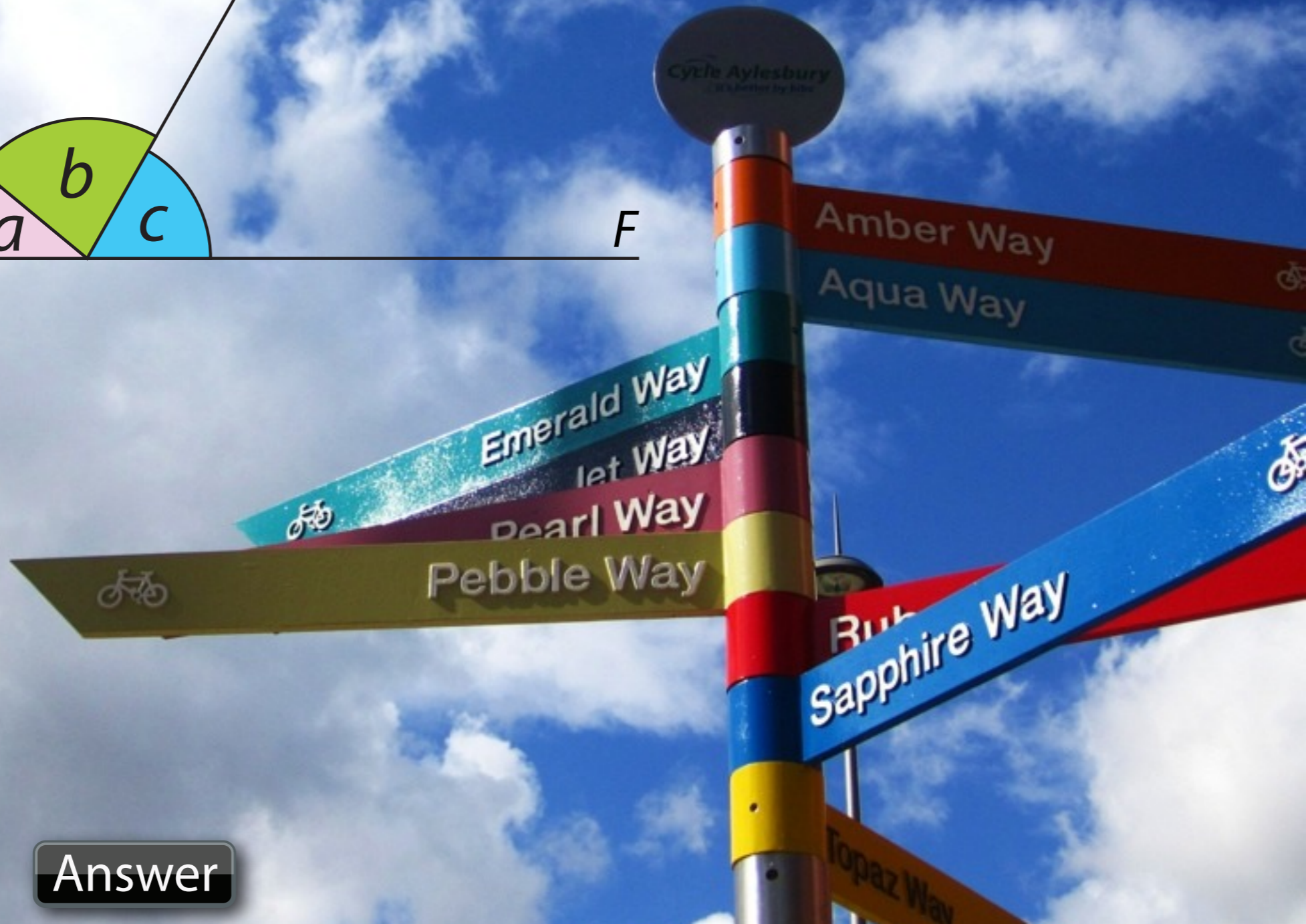
$a + b + c = 180^\circ$

Continue the table.

$a$	$b$	$c$
$20^\circ$	$40^\circ$	$120^\circ$
$40^\circ$	$80^\circ$	$60^\circ$
$50^\circ$	$100^\circ$	$30^\circ$

and many others.

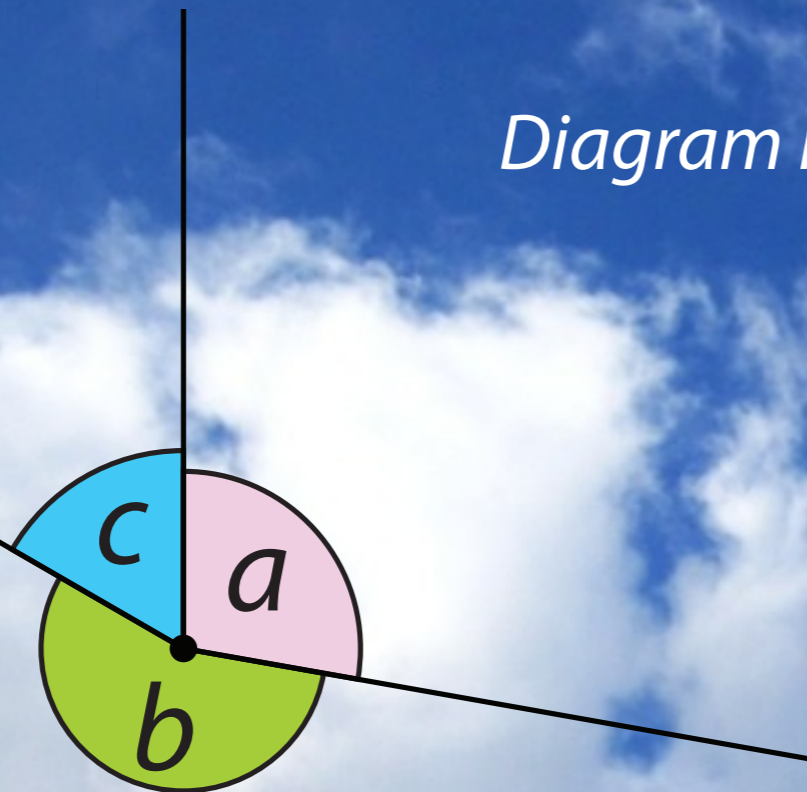
**Answer**





**f2** Look at the diagram.

*Diagram not to scale.*



$b = 2a$

$a + b + c = 360^\circ$

**a** Continue the table.

$a$	$b$	$c$
$50^\circ$	$100^\circ$	$210^\circ$

**b** What is the maximum value for  $a$ ?

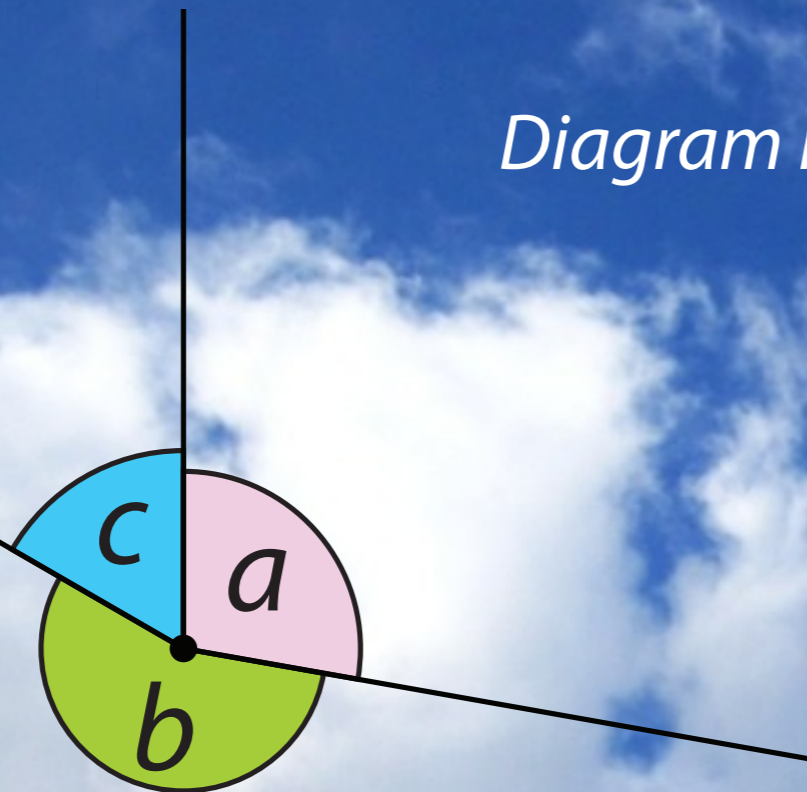
$\bar{\uparrow}$  maximum





**f2** Look at the diagram.

*Diagram not to scale.*



$$b = 2a$$

$$a + b + c = 360^\circ$$

**a** Continue the table.

$a$	$b$	$c$
$50^\circ$	$100^\circ$	$210^\circ$
$80^\circ$	$160^\circ$	$120^\circ$
$100^\circ$	$200^\circ$	$60^\circ$

**b** What is the maximum value for  $a$ ?

maximum

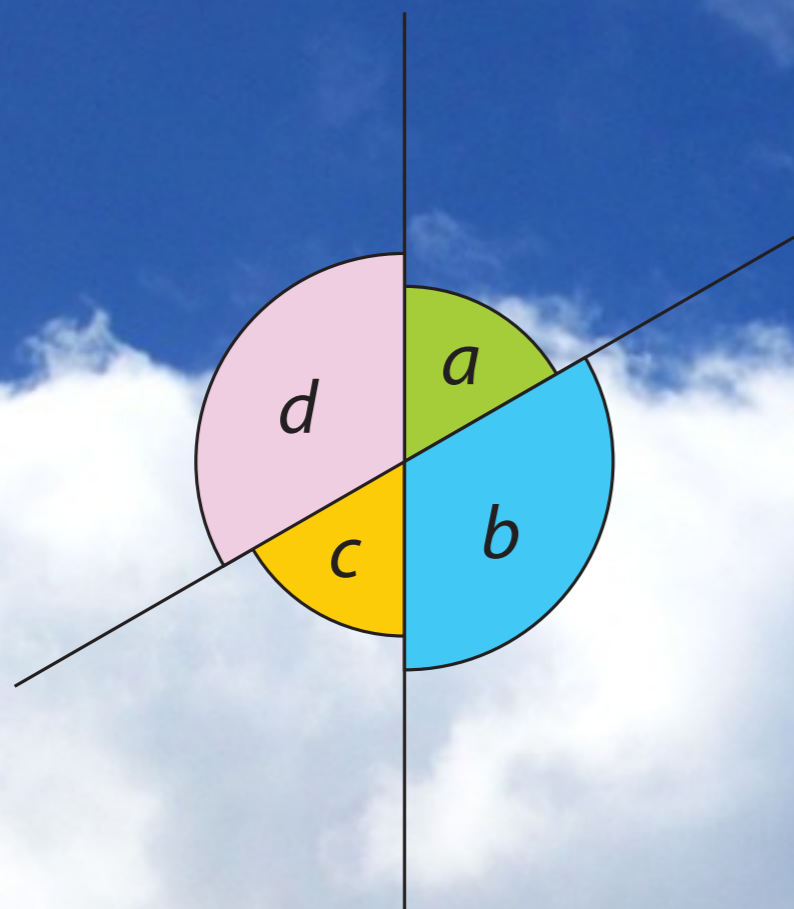
$$a = 120^\circ \quad b = 240^\circ \quad c = 0^\circ$$





**f3**

Look at the diagram.



$$a + b + c + d = 360^\circ$$

Continue the table

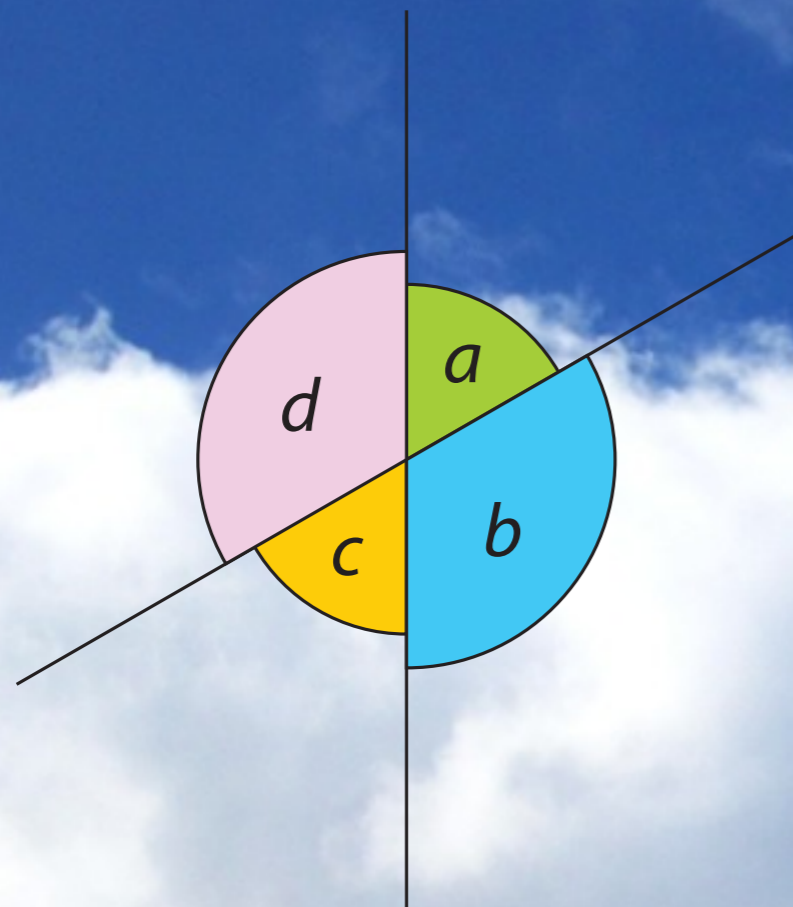
$a$	$b$	$c$	$d$
$50^\circ$	$130^\circ$	$50^\circ$	$130^\circ$





f3

Look at the diagram.



$$a + b + c + d = 360^\circ$$

Continue the table

a	b	c	d
50°	130°	50°	130°
10°	170°	10°	170°
60°	120°	60°	120°
40°	120°	40°	120°

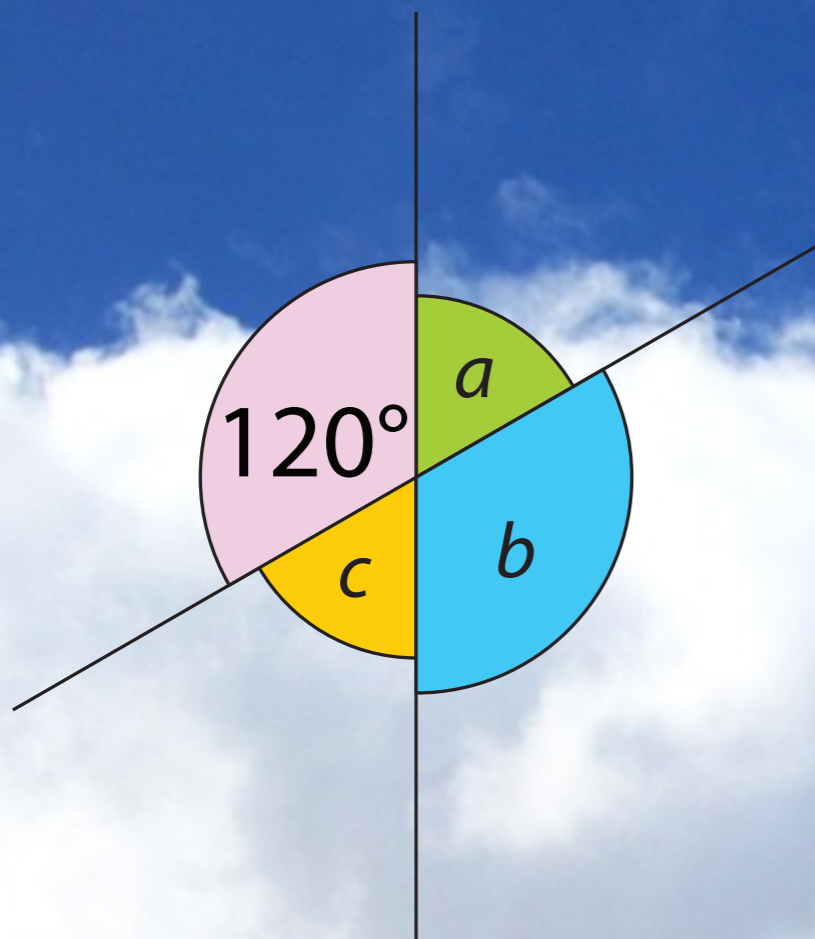
Answer





ev

Look at the diagram.



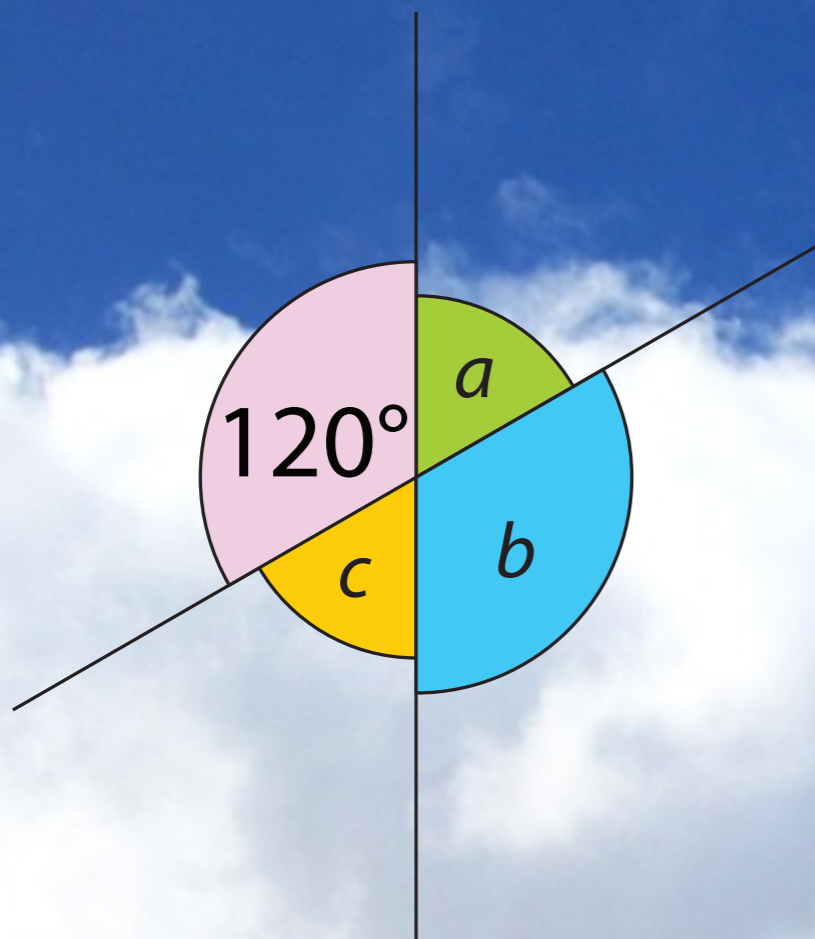
Calculate  $a$ ,  $b$ , and  $c$ .





ev

Look at the diagram.



Calculate  $a$ ,  $b$ , and  $c$ .

Answer

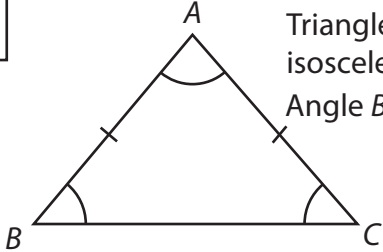
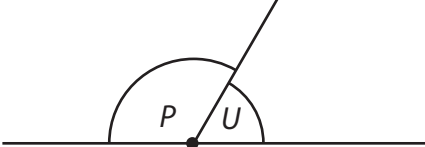
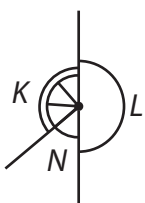

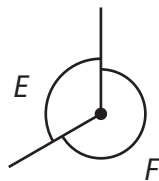
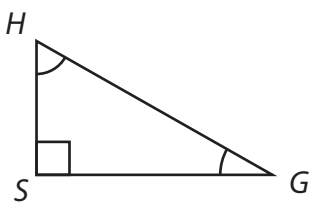
$$a = 60^\circ \quad b = 120^\circ \quad c = 60^\circ$$





## ex S1.1 Angles

- Cut out the cards below.
- Solve the problem using the information on the cards.

<p><b>1</b> When you have worked out all of the angles then you will be able to de-code this message:</p> <p>80°, 45°, 30°, 180°, 120°, 90°              80°, 20°, 120°,              240°, 61°, 45°.</p>	<p><b>2</b> Calculate the values of each of the angles.</p> <p>Keep a record of the value of each angle e.g.</p> <p>Angle <math>P = 119^\circ</math></p>
<p><b>3</b></p>  <p>Triangle <math>ABC</math> is isosceles.              Angle <math>B</math> is <math>50^\circ</math></p>	<p><b>4</b></p> <p>You are given some diagrams. Information for a diagram is sometimes on more than one card.</p>
<p><b>5</b></p> <p>Angle <math>Q</math> is 8 times the size of angle <math>R</math>.</p>	<p><b>6</b></p>  <p>Angles <math>P</math> and <math>U</math> are on a straight line.</p>
<p><b>7</b></p>  <p>Angle <math>L</math> is <math>180^\circ</math>              Angle <math>K</math> is three times the size of angle <math>N</math>.</p>	<p><b>8</b></p> 
<p><b>9</b></p>  <p>Angle <math>F</math> is twice the size of angle <math>E</math>.</p>	<p><b>10</b></p> 
<p><b>11</b></p> <p>Angles <math>Q</math> and <math>R</math> are on a straight line.</p>	<p><b>12</b></p> <p>Triangle <math>GHS</math> is scalene.</p> <p>Angle <math>H</math> is twice the size of angle <math>G</math>.</p>