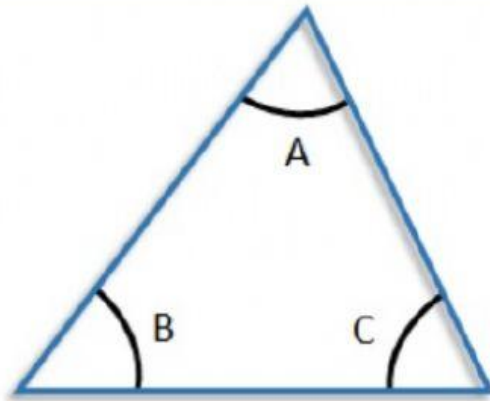


Angles in a triangle

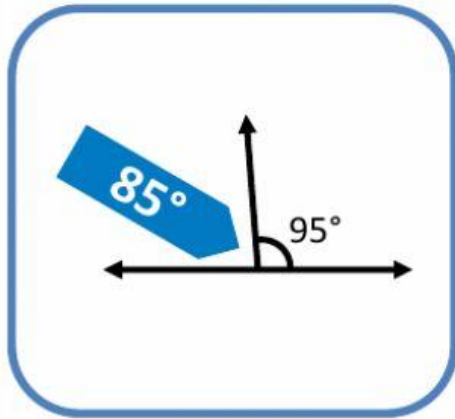
A triangle has 3 angles.

The angles in a triangle always total 180° .
(degrees)



I can calculate angles on a straight line.

How can we find missing Angles on a Straight line?



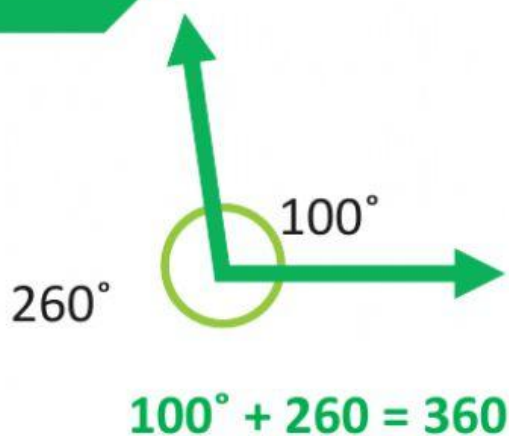
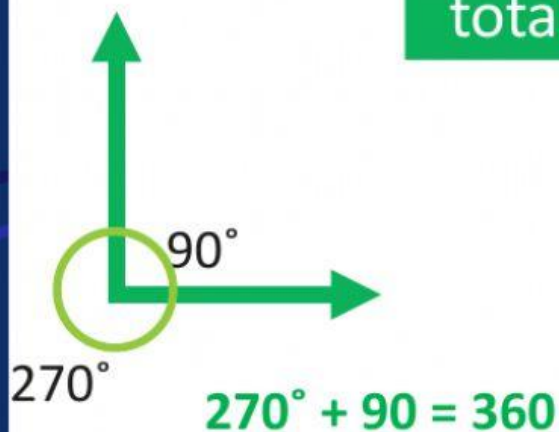
$$180^\circ - 95^\circ = 85^\circ$$

Angles at a Point



Two straight lines meet at a point make an angle.

Angles at a point
total **360°**.



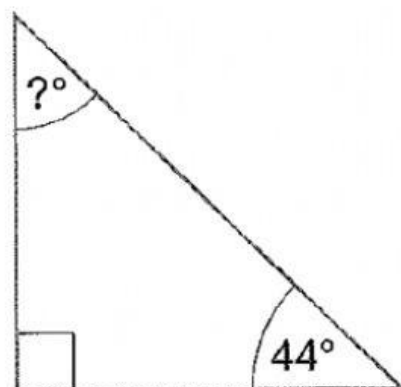
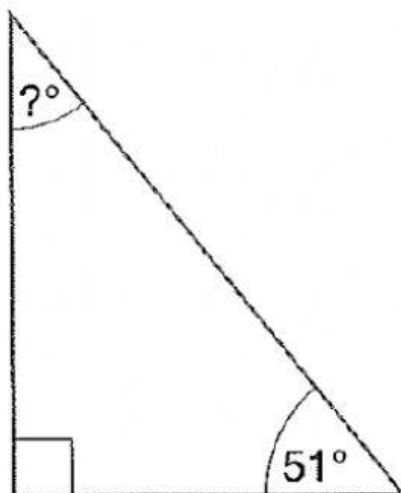
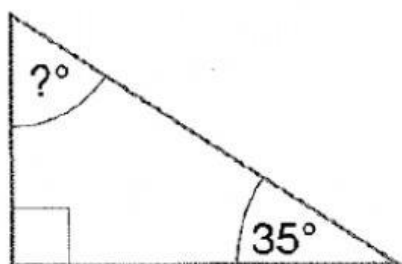
Challenge
1

Draw lines to match each triangle to its missing angle.

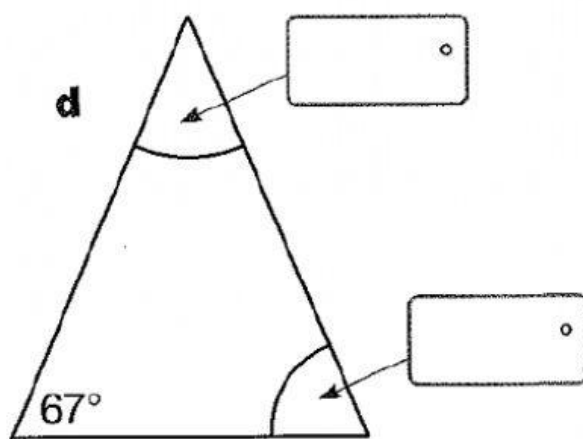
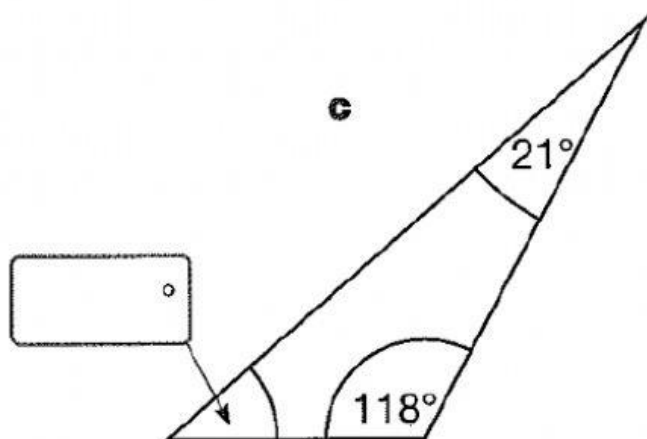
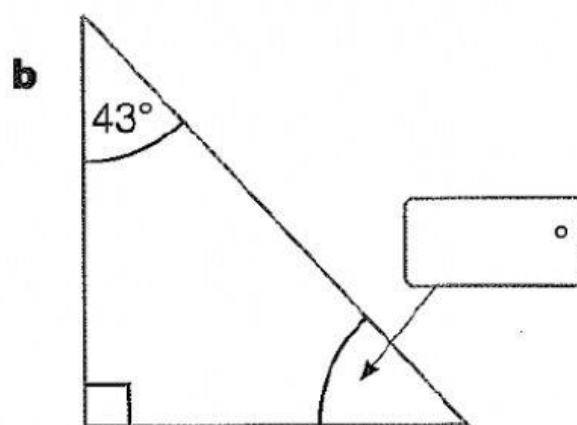
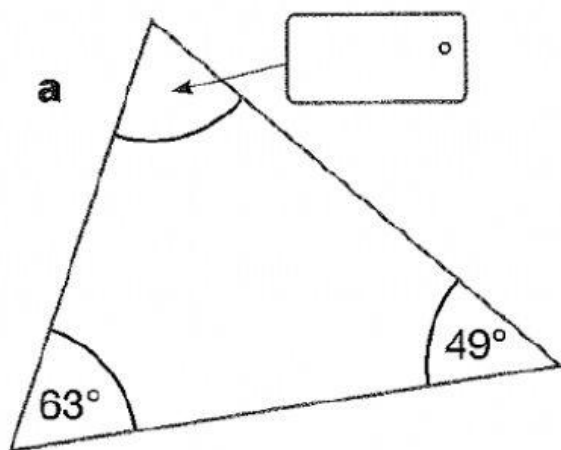
39°

46°

55°



1 Fill in the missing angles.

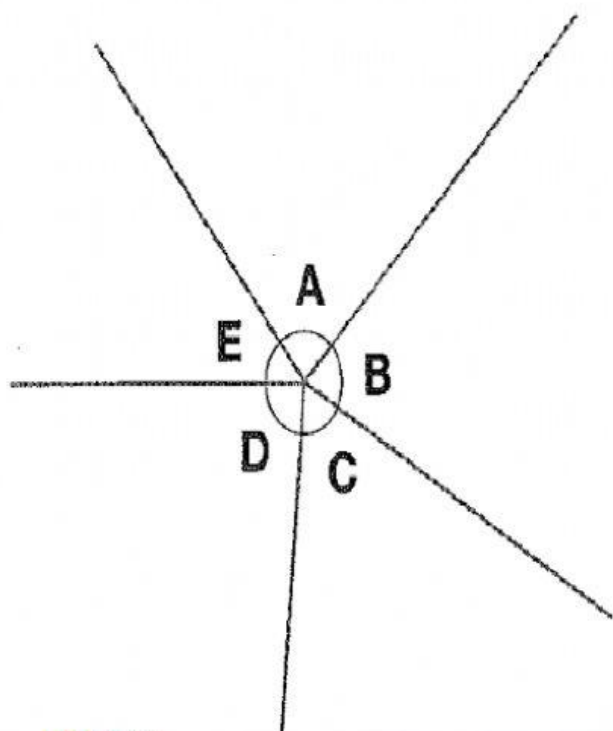


2 The sum of angles in any triangle will always equal 180° . Therefore, a figure cannot be a triangle without having angles adding up to 180° . Look at the angles of the shapes given in the table. Work out whether or not each shape can be a triangle and tick the correct column.

Angles of shape	Is it a triangle?	
	Yes	No
$37^\circ, 48^\circ, 95^\circ$		
$84^\circ, 39^\circ, 57^\circ$		
$55^\circ, 68^\circ, 58^\circ$		
$29^\circ, 53^\circ, 98^\circ$		
$17^\circ, 25^\circ, 137^\circ$		
$26^\circ, 66^\circ, 89^\circ$		



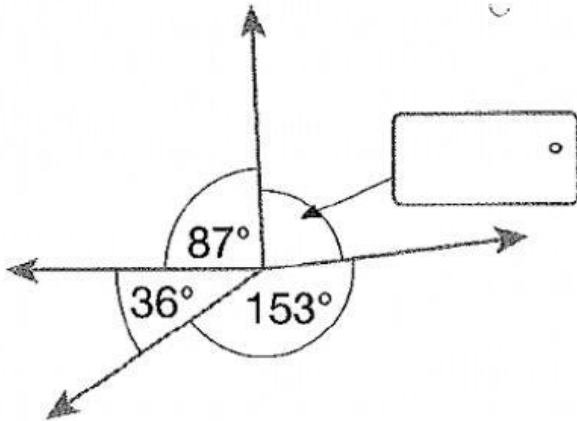
Angles A, B, C, D and E are arranged around a point.
Circle the only number sentence that is true.



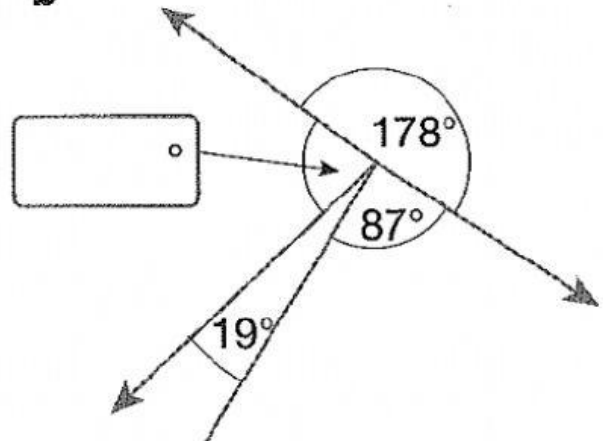
- a** $A + B + C + D + E = 180^\circ$
- b** $A + B + C = D + E$
- c** $A + B + C + D + 180^\circ = 360^\circ$
- d** $A + B + C + D + E = 360^\circ$
- e** $360^\circ = 270^\circ + A + B + C + D + E$

1 Fill in the missing angles.

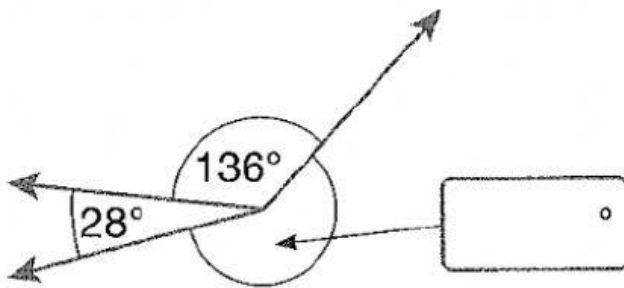
a



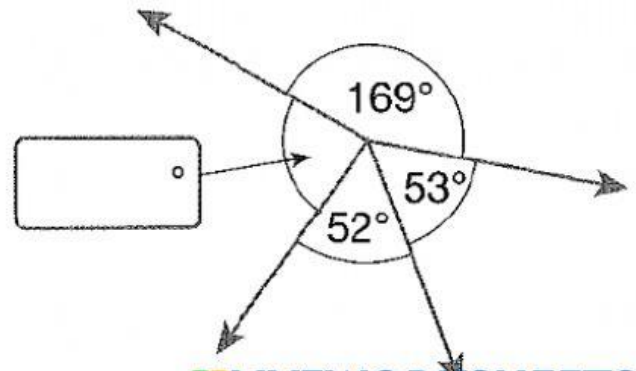
b



c



d



- 2 The sum of angles around a point equals 360° . A set of angles with a sum greater or less than 360° cannot be arranged around a point without an overlap or a gap.

Work out whether or not each set of angles in the table can be arranged around a point without a gap or overlap.

Tick the correct column.

Angles	Angles around a point?	
	Yes	No
$55^\circ, 27^\circ, 87^\circ, 44^\circ, 149^\circ$		
$74^\circ, 57^\circ, 119^\circ, 77^\circ, 72^\circ$		
$84^\circ, 73^\circ, 99^\circ, 92^\circ, 13^\circ$		
$106^\circ, 24^\circ, 57^\circ, 81^\circ, 91^\circ$		
$34^\circ, 98^\circ, 83^\circ, 137^\circ, 8^\circ$		
$162^\circ, 9^\circ, 66^\circ, 59^\circ, 64^\circ$		