02:00

The teacher said "If you join the midpoints of the sides of an irregular quadrilateral you will always get …". Before the teacher could finish this statement four students guessed what the next words could be. Arun guessed 'a square', Bronwyn guessed 'a parallelogram', Colin guessed 'a rectangle' and Doreen guessed 'another quadrilateral similar to the original'. Who was right? Justify your answer.
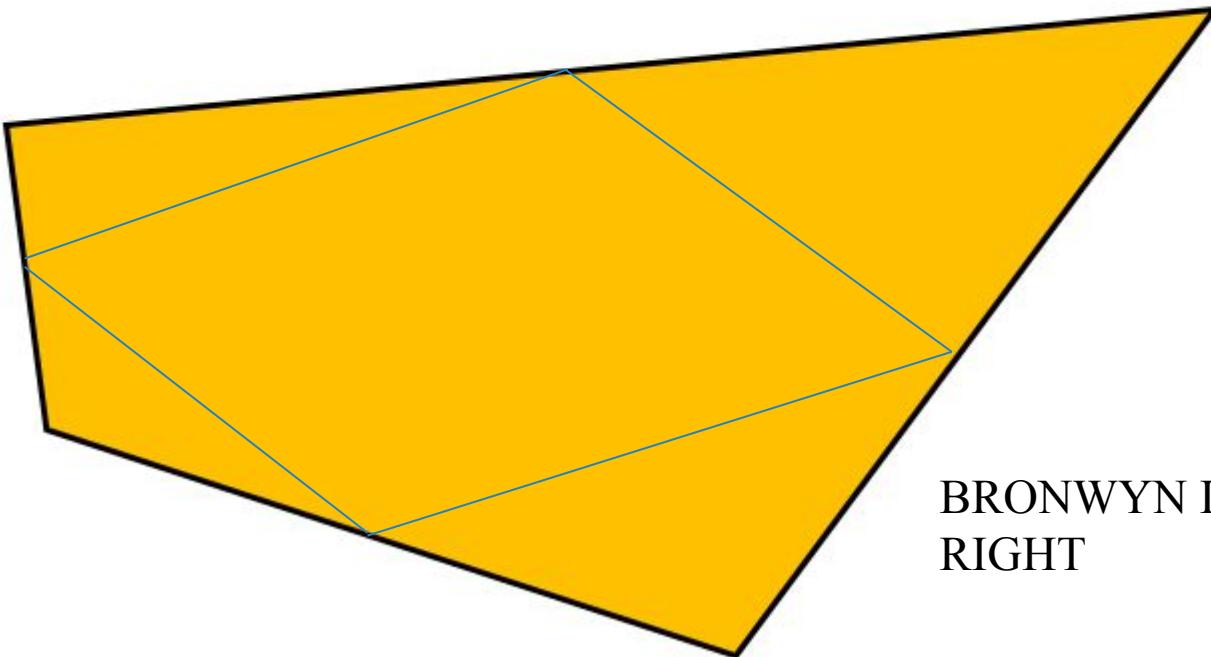
BRONWYN IS RIGHT

STARTE
R

Q2 Construct a 60° angle.

Solution

Draw two sides of an equilateral triangle.

60°
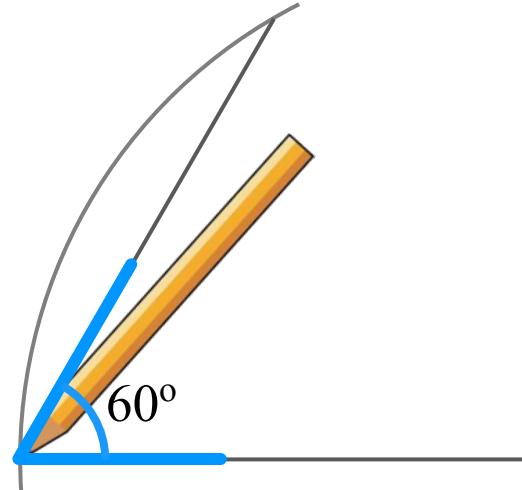
Q3 Construct a 30° angle.

Solution

Bisect the the 60° angle.
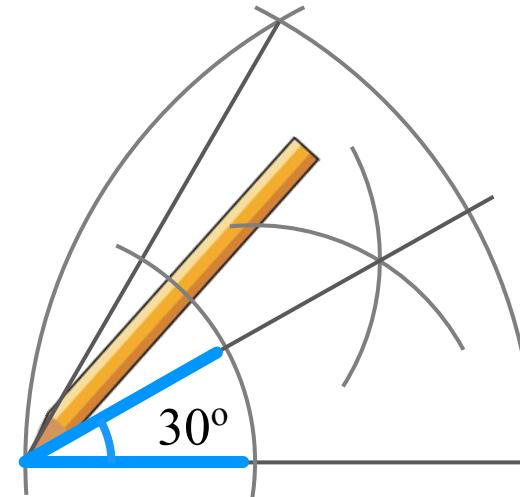
30°

MY TURN

Example: side, angle, side

Construct a triangle PQR with lines $PQ = 8$ cm, $QR = 5$ cm and $P\hat{Q}R = 40°$

03:00
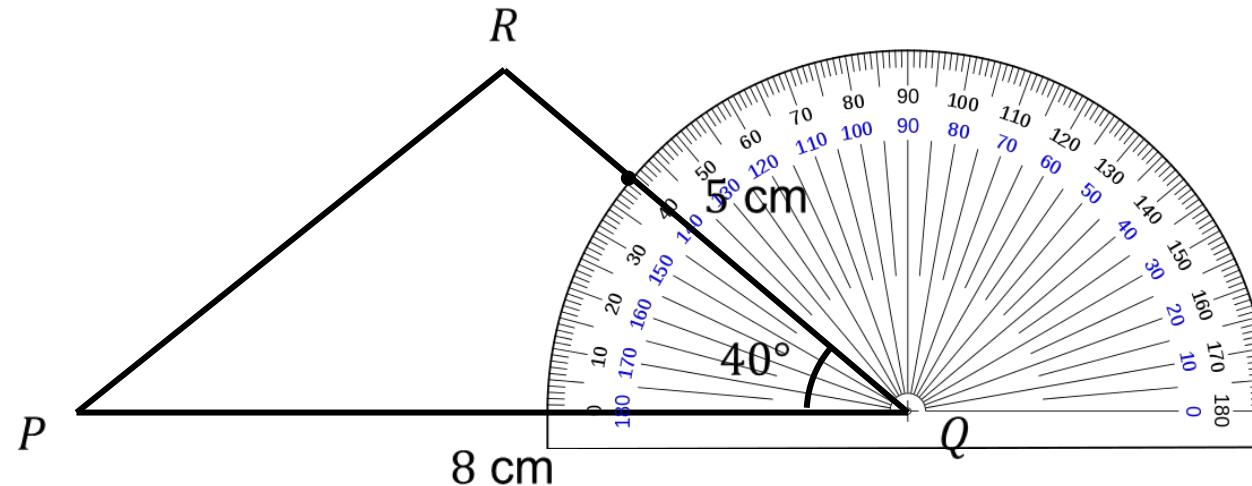
1. Draw an 8 cm line and label the ends P and Q. This is the line PQ.
2. Place the centre of the protractor on Q with the 0° line pointing to P.
3. Measure a 40° angle clockwise from 0°. Mark it with a dot.
4. Draw a 5 cm line from Q through the dot. Label the end of this line R.
5. Join up P and R to complete the triangle.

YOUR TURN

03:00

Ex3 Using a ruler, compass and protractor, construct the following **SAS** triangle.

Solution

8cm

40º

7cm

8cm

40º
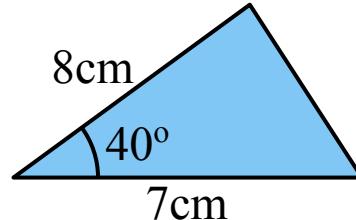
(1) Draw a 7cm line with a ruler.

(2) Draw an arc with length 8cm.

(3) Measure an angle of 40º.

(4) Draw a line through the angle to the arc.

(5) Join up the end of the lines.
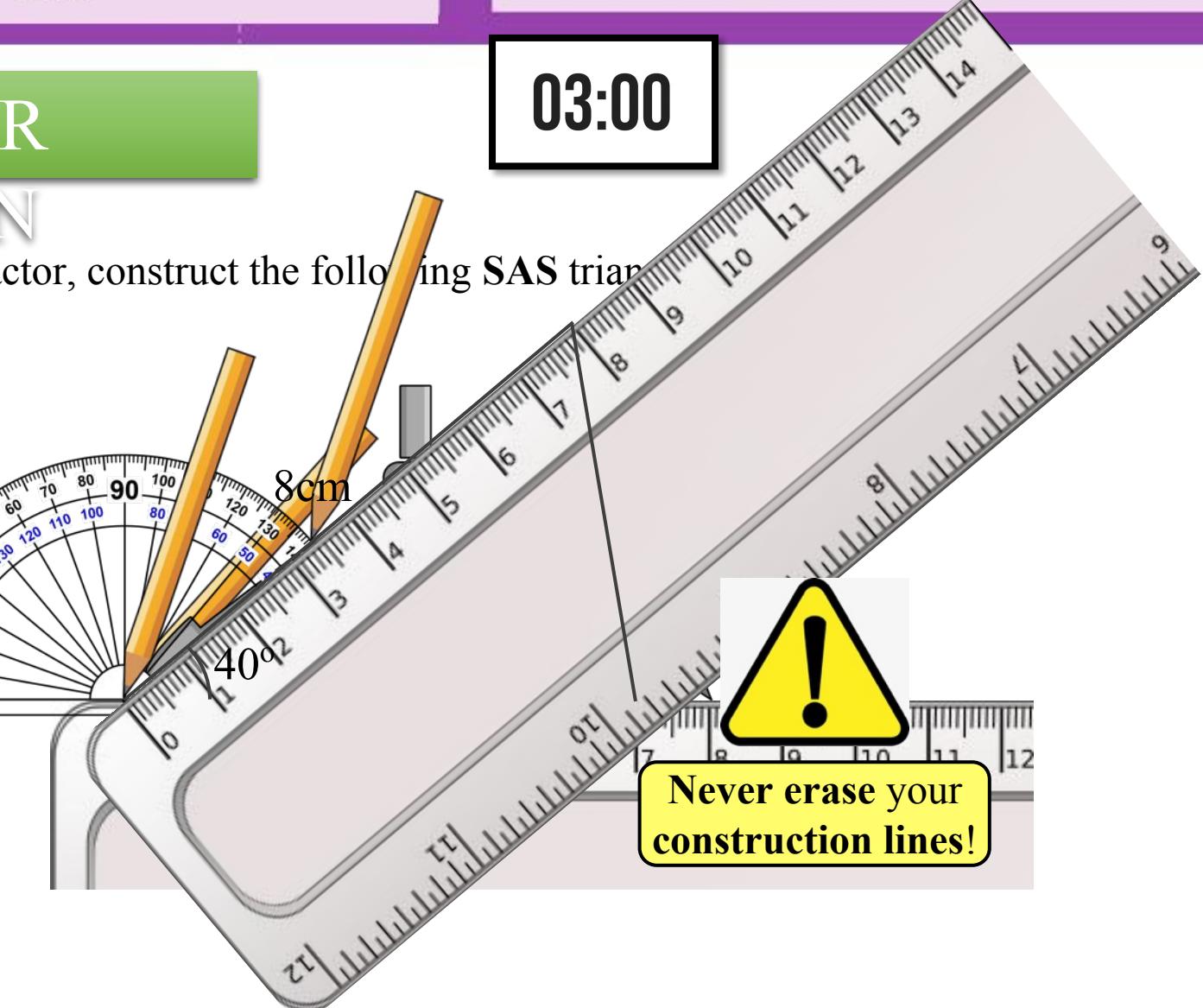
**Never erase** your **construction lines!**

MY TURN

Example: angle, side, angle

Construct a triangle ABC with lines $AB = 9$ cm, $A\hat{B}C = 30°$ and $B\hat{A}C = 50°$

C

$50°$

$30°$

A

B

9 cm
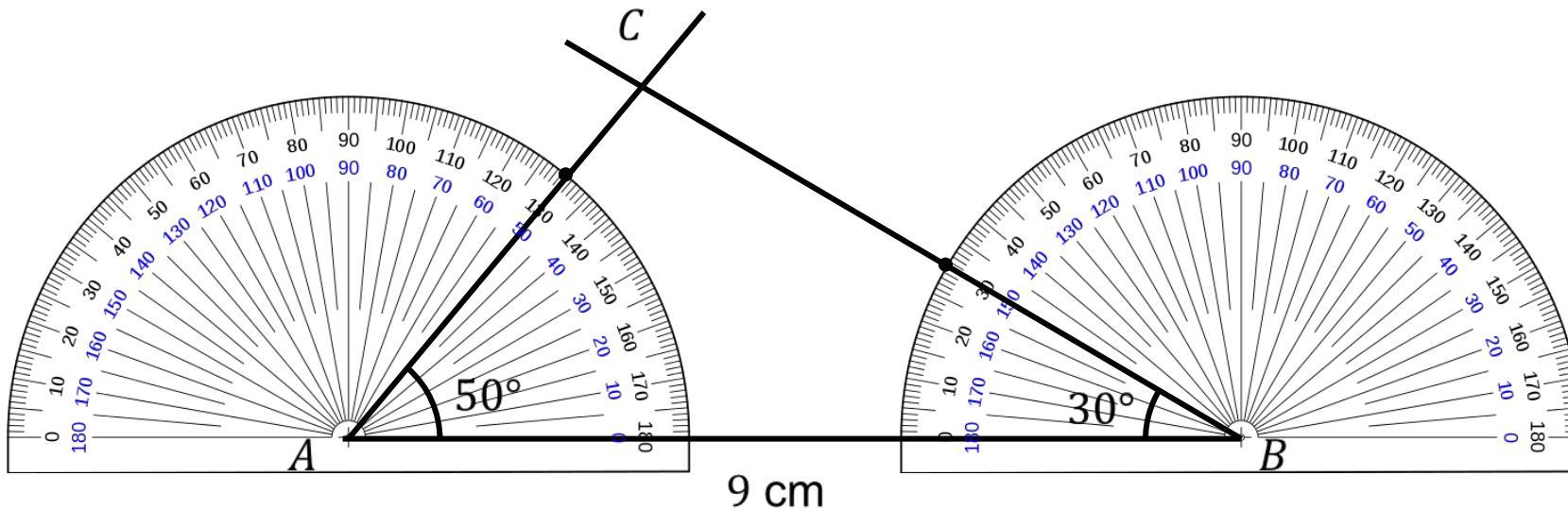
03:00

1. Draw a 9 cm line and label the ends A and B. This is the line AB.
2. Place the centre of the protractor on B with the 0° line pointing to A.
3. Measure a 30° angle clockwise from 0°. Mark it with a dot.
4. Draw a line from B through the dot.
5. Place the centre of the protractor on A with the 0° line pointing to B.
6. Measure a 50° angle anticlockwise from 0°. Complete as with other angle.
7. Point C is where the two lines meet.

YOUR TURN

Ex4 Using a ruler, compass and protractor, construct the following ASA triangle accurately.

Solution

35°   52°
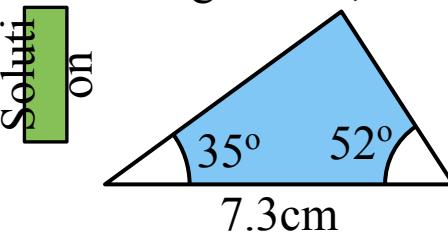
7.3cm

03:00

(1) Draw a 7.3cm line with a ruler.

(2) Measure both angles.

(3) Draw a feint line through each angle and label them.

(4) Draw a solid line over each feint line up to the intersection.
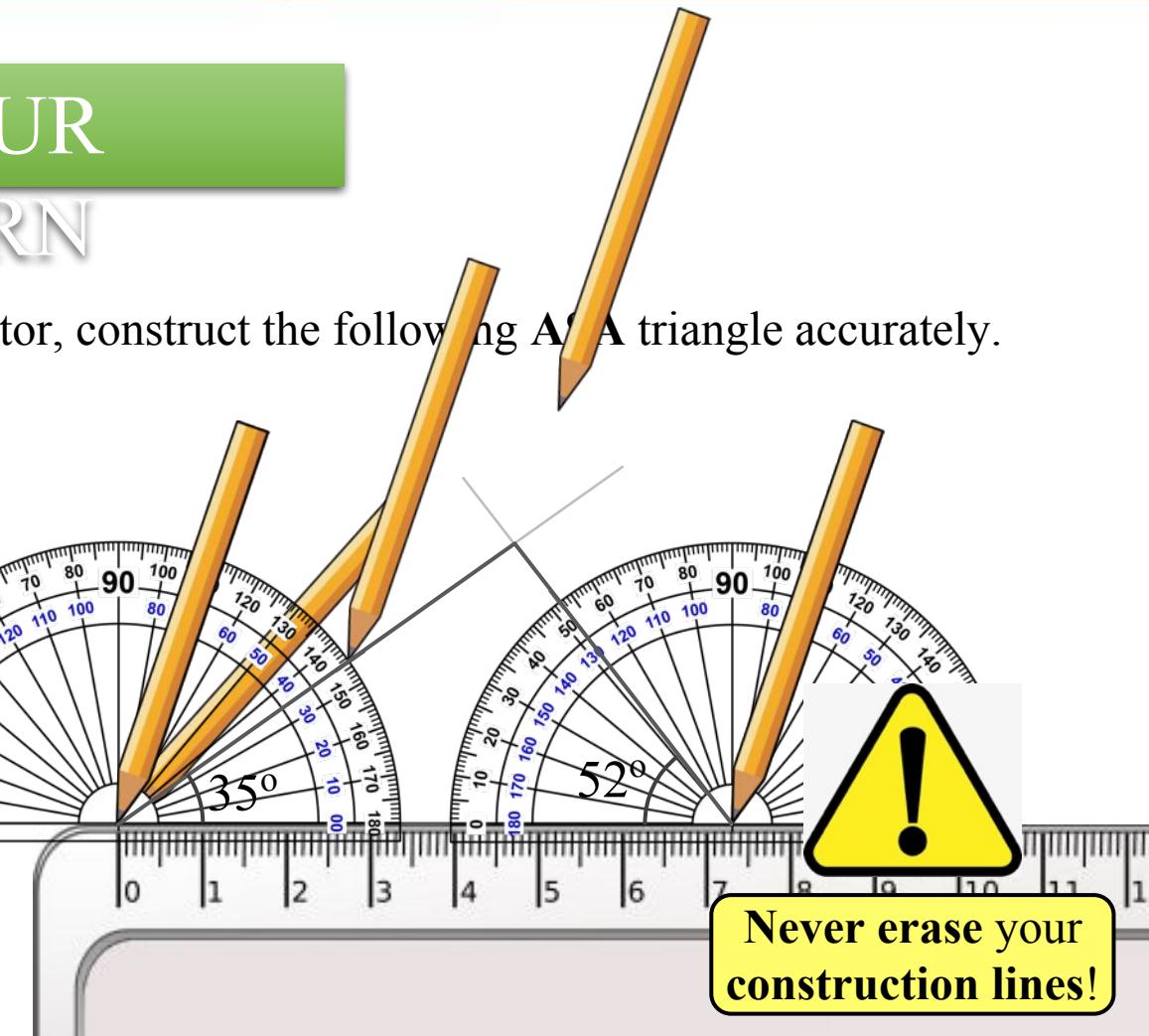
35°   52°

Never erase your **construction lines!**

MINI-PLE NARY

03:00

The lengths of two of the sides of a kite are 7.6 cm and 4.3 cm.
The length of the shorter diagonal of the kite is 5.2 cm.

Nov 05   3H

In the space below, use ruler and compasses to **construct** an accurate, full-size drawing of the kite.
You must show all construction lines.

CORE TASK

Use the scale of 1cm = 50m, construct the following triangles.

[a] 150m 175m 250m

[b] 0.7km 0.2km 0.4km

[c] 175m 45° 300m

[d] 0.25km 58° 425cm
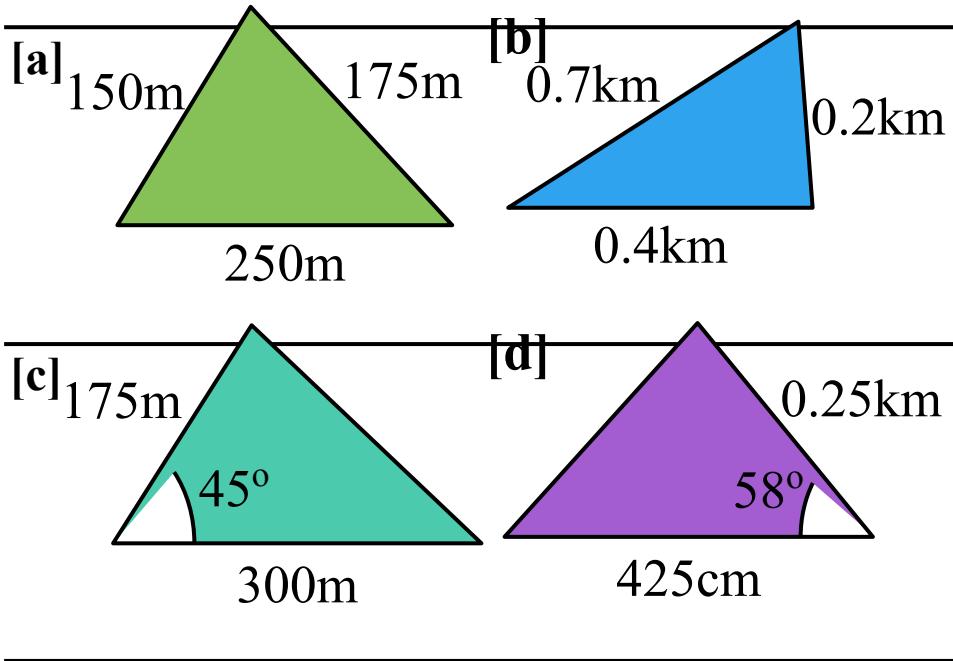
EXTENSION

Q1 Accurately draw two different isosceles triangles with an angle of 40°.

Q2 Construct an equilateral triangle with side length of 7cm. By measuring its height, work out its area.

**CHALLENGE**

Accurately draw the sectors below.

80° 5.4cm

132° 3.8cm

10:00
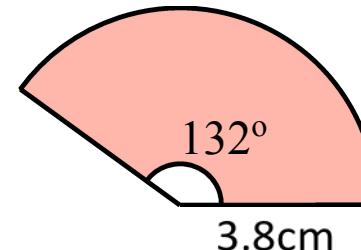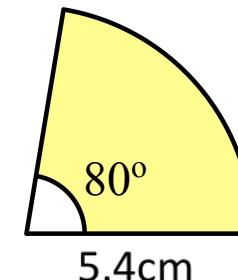
PREVIOUS PAPER
QUESTION

03:00

A sketch of triangle *ABC* is shown.
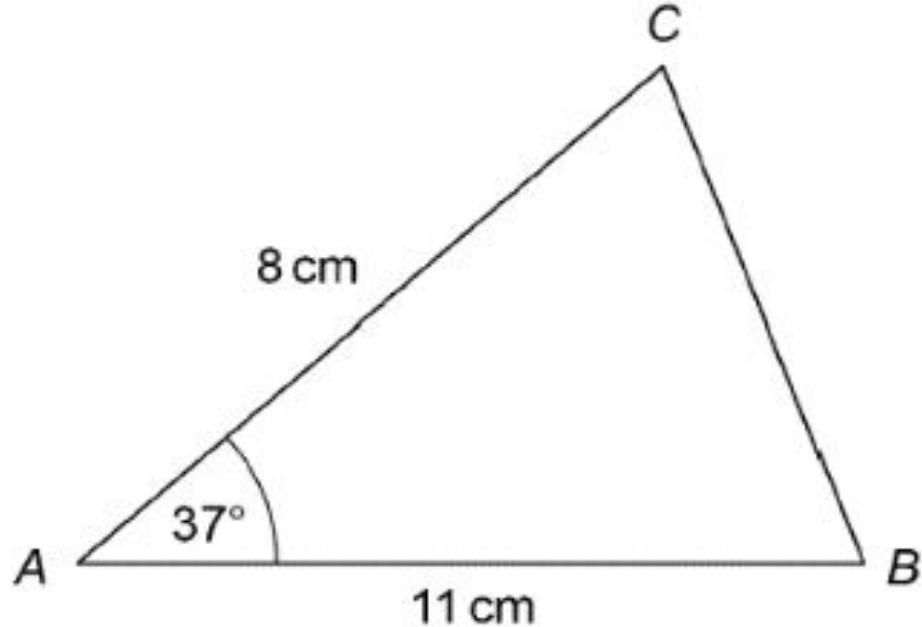
Not drawn
accurately

In the space below, complete an accurate drawing of triangle *ABC*.

[2 marks]