

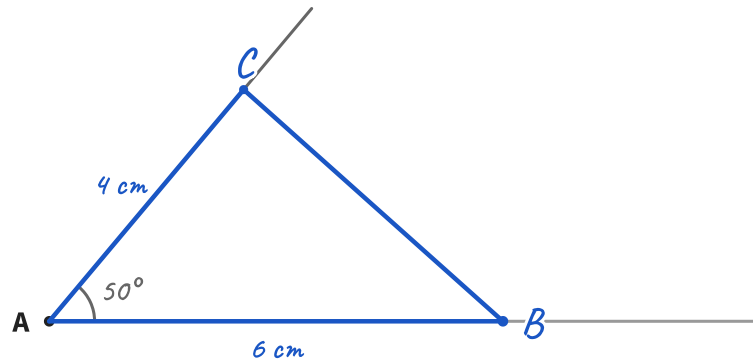
Constructing Triangles: Sides and Angles

ANSWERS

1

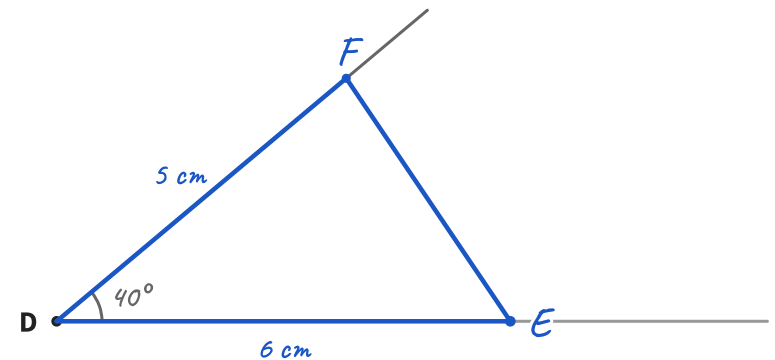
Measure AB along the line first.

Construct triangle ABC with $AB = 6\text{ cm}$, angle $A = 50^\circ$ and $AC = 4\text{ cm}$.



2

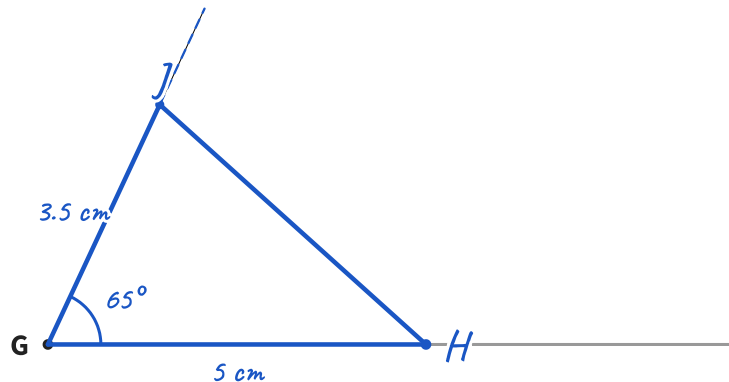
Construct triangle DEF with $DE = 6\text{ cm}$, angle $D = 40^\circ$ and $DF = 5\text{ cm}$.



3

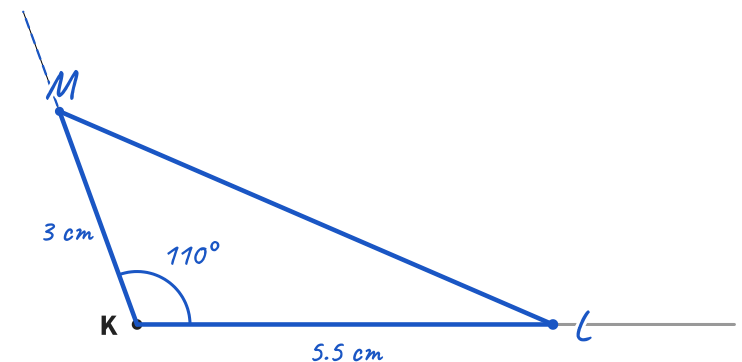
Base, angle, side, join.

Construct triangle GHJ with $GH = 5\text{ cm}$, angle $G = 65^\circ$ and $GJ = 3.5\text{ cm}$.



4

Construct triangle KLM with $KL = 5.5\text{ cm}$, angle $K = 110^\circ$ and $KM = 3\text{ cm}$.

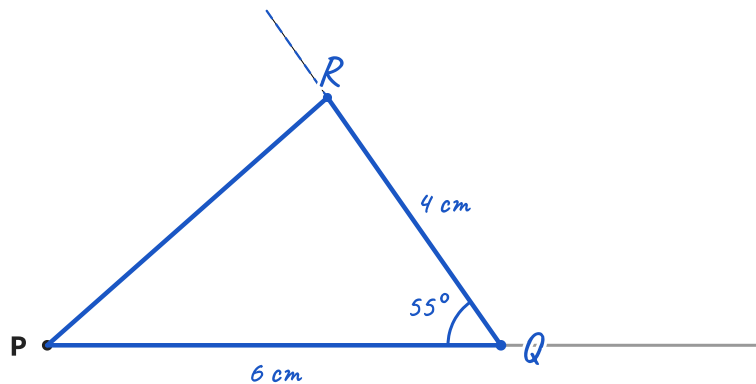


Constructing Triangles: Sides and Angles

ANSWERS

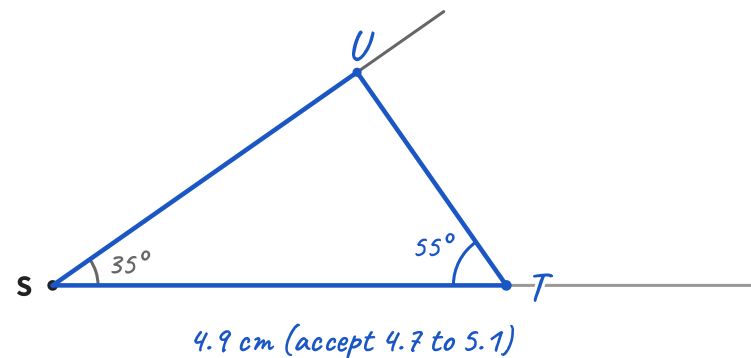
5 Notice the change!

Construct triangle PQR with $PQ = 6$ cm, angle $Q = 55^\circ$ and $QR = 4$ cm.



6 Notice the change!

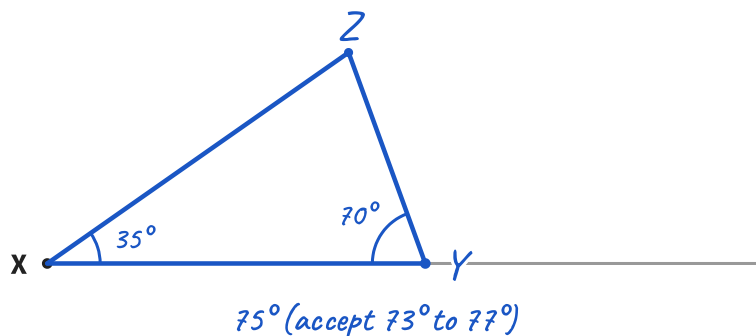
Construct triangle STU with $ST = 6$ cm, angle $S = 35^\circ$ and angle $T = 55^\circ$. Then measure SU.



SU =

7

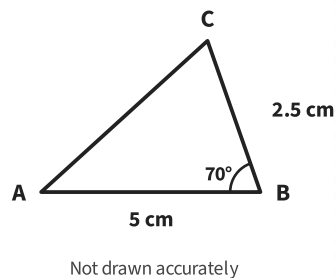
Construct triangle XYZ with $XY = 5$ cm, angle $X = 35^\circ$ and angle $Y = 70^\circ$. Then measure angle Z.



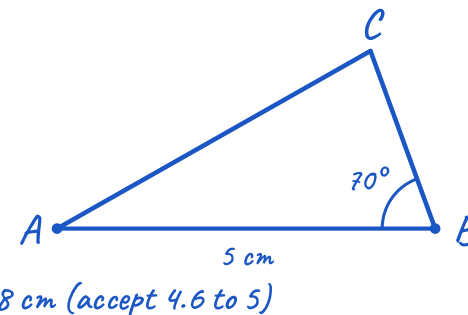
Angle Z =

8

Here is a sketch of triangle ABC. Construct it accurately. Then measure AC.



AC =

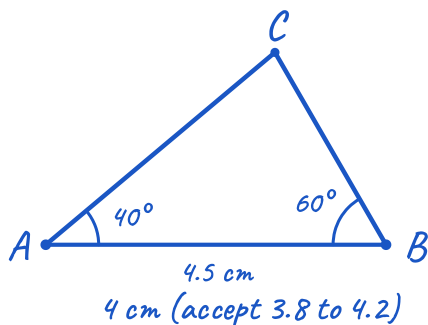


Constructing Triangles: Sides and Angles *further practice*

ANSWERS

9

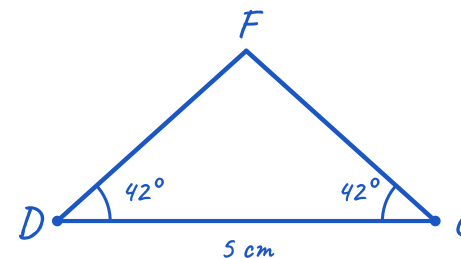
Construct triangle ABC with AB = 4.5 cm, angle A = 40° and angle B = 60° . Then measure AC.



AC =

10

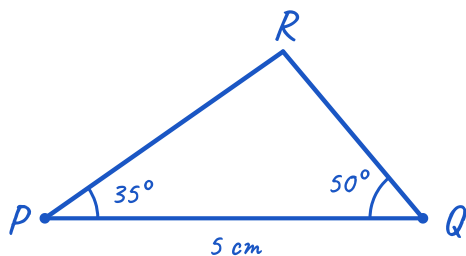
DE = 5 cm, angle D = 42° and angle E = 42° . Construct triangle DEF. Measure DF and EF. What do you notice?



Answer Both 3.4 cm (accept 3.2 to 3.6). They are equal.

11

In triangle PQR, PQ = 5 cm, angle P = 35° and angle R = 95° . Work out angle Q, then construct the triangle.

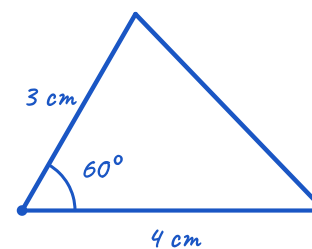


Answer

$$\text{Angle } Q = 180^\circ - 35^\circ - 95^\circ = 50^\circ$$

12

A sail is a triangle. Two of its edges are 4 m and 3 m long, with an angle of 60° between them. Make a scale drawing. How long is the third edge?
Scale: 1 cm represents 1 m



Answer

$$3.6 \text{ m (accept 3.4 to 3.8)}$$

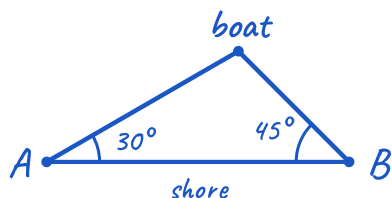
Constructing Triangles: Sides and Angles *further practice*

ANSWERS

13

Coastguards at A and B are 8 km apart on a straight shore. A boat is at an angle of 30° to the shore from A and 45° from B. Make a scale drawing. How far is the boat from A?

Scale: 1 cm represents 2 km

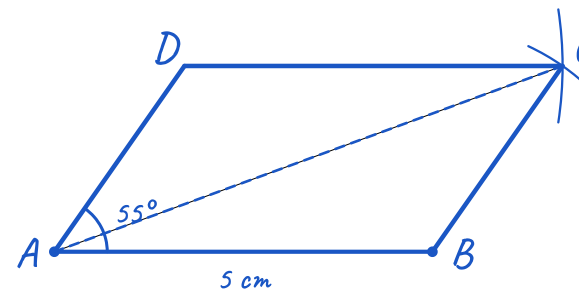


Answer

5.9 km (accept 5.5 to 6.3)

14

Construct the parallelogram ABCD with $AB = 5$ cm, $AD = 3$ cm and angle $A = 55^\circ$. Measure the diagonal AC.

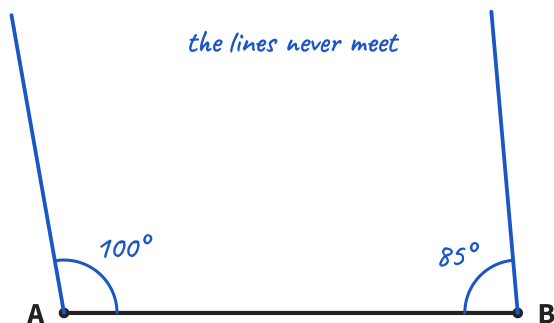


AC =

7.2 cm (accept 7 to 7.4)

15

Can you construct a triangle with angle $A = 100^\circ$ and angle $B = 85^\circ$, whatever the length of AB? Explain.

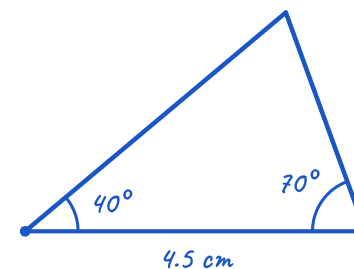


Answer

No. $100^\circ + 85^\circ = 185^\circ$, more than 180° , so the lines never meet.

16

Ria and Tom each construct a triangle with a 4.5 cm side and angles of 40° and 70° at its ends. Will their triangles be the same? Explain.



Answer

Yes. The two angles meet in only one place, so the triangles are congruent (ASA).