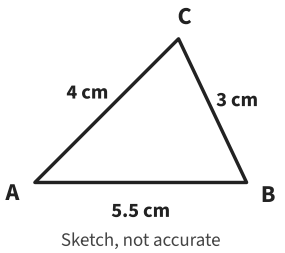
Constructing a triangle from three sides

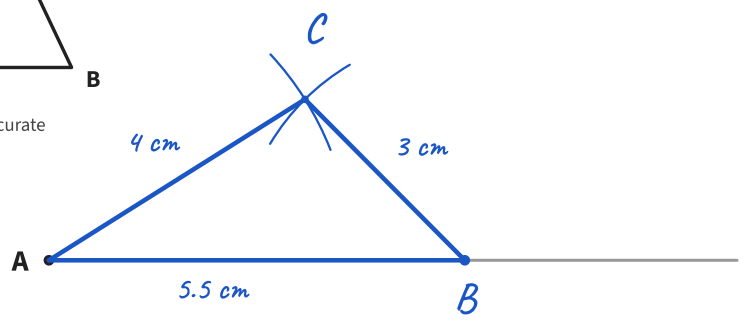
ANSWERS

1 Measure AB along the line first.

Construct triangle ABC with AB = 5.5 cm, AC = 4 cm and BC = 3 cm.
Leave your arcs showing.

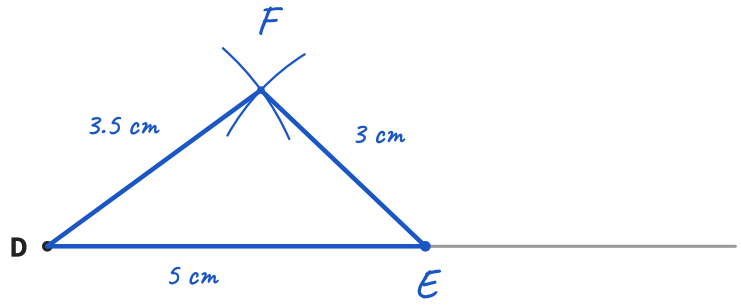


Sketch, not accurate



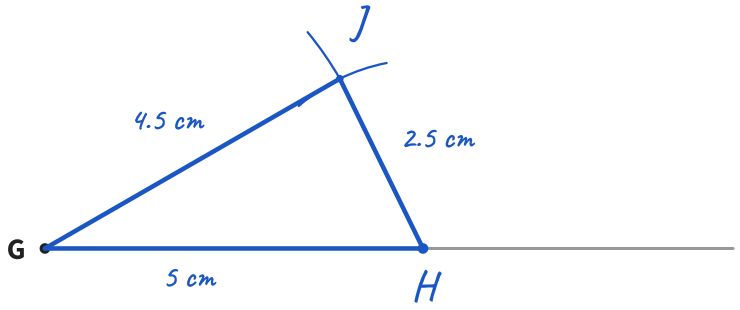
2 Arc from D with DF, from E with EF.

Construct triangle DEF with DE = 5 cm, DF = 3.5 cm and EF = 3 cm.
Leave your arcs showing.



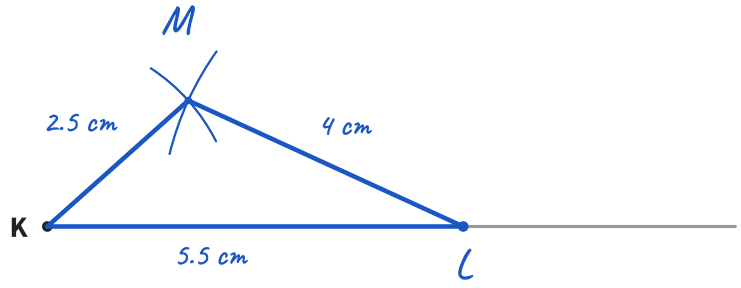
3

Construct triangle GHJ with GH = 5 cm, GJ = 4.5 cm and HJ = 2.5 cm.
Leave your arcs showing.



4

Construct triangle KLM with KL = 5.5 cm, KM = 2.5 cm and LM = 4 cm.
Leave your arcs showing.

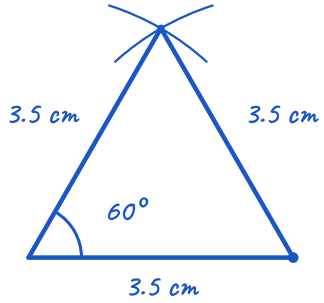


Constructing a triangle from three sides

ANSWERS

5 *Notice the change!*

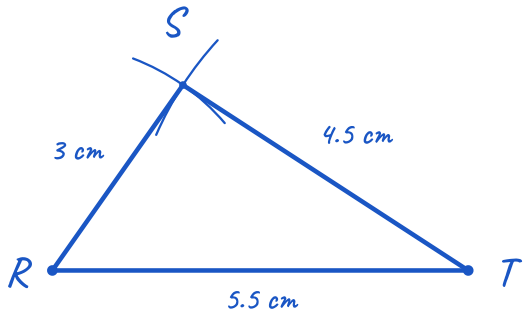
Construct an equilateral triangle with sides of 3.5 cm. Then measure one of its angles.



Angle = 60° (accept 58° to 62°)

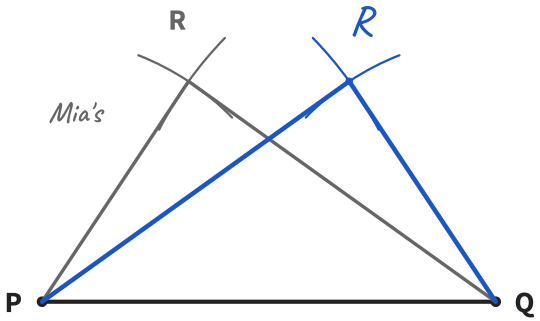
6 *Notice the change!*

Triangle RST has RS = 3 cm, ST = 4.5 cm and RT = 5.5 cm. Construct it with its longest side as the base. Leave your arcs showing.



7

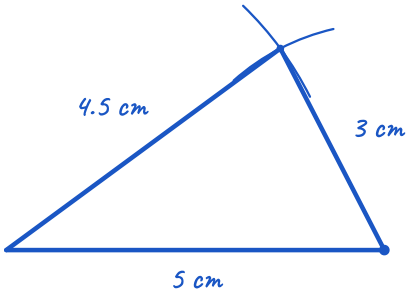
Mia should have PR = 5 cm and QR = 3.5 cm. Here is her construction. What did she do wrong?



Answer She swapped the ends. PR starts at P, so the 5 cm arc goes from P.

8

A triangular window has sides of 1 m, 90 cm and 60 cm. Make a scale drawing, with 1 cm for 20 cm.



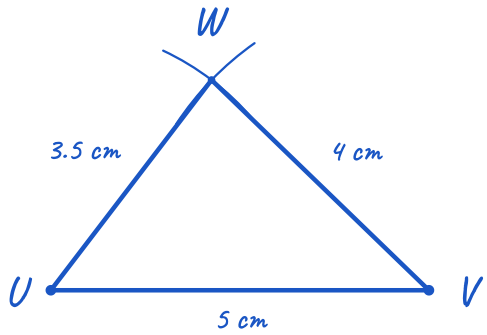
Drawn Sides of 5 cm, 4.5 cm and 3 cm

Constructing a triangle from three sides *further practice*

ANSWERS

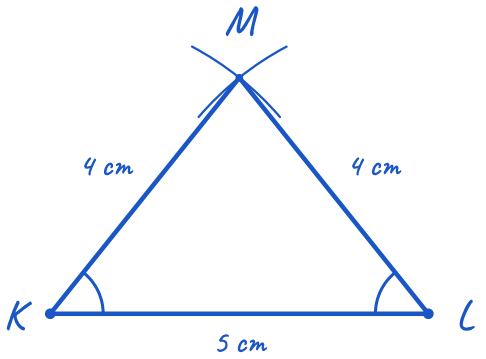
9

Construct triangle UVW with UV = 5 cm, VW = 4 cm and UW = 3.5 cm.
Leave your arcs showing.



10

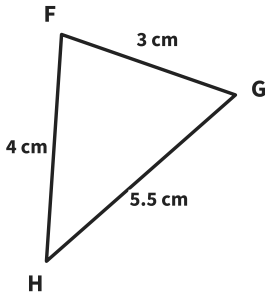
Triangle KLM is isosceles. KL = 5 cm, and KM and LM are both 4 cm. Construct it.
Measure angles K and L. What do you notice?



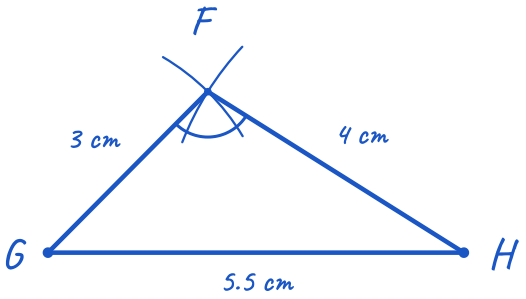
Answer *Both about 51° (accept 49° to 53°). They are equal.*

11

Here is a sketch of triangle FGH. Construct it accurately, with its longest side as the base. Measure its largest angle.



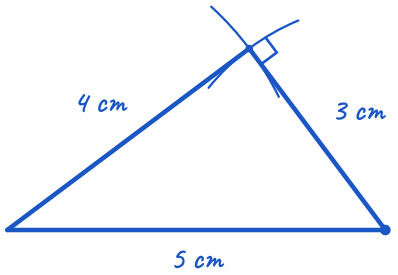
Not drawn accurately



Largest angle = *Angle F, about 103° (accept 101° to 105°)*

12

A shelf bracket is a triangle with sides of 50 cm, 40 cm and 30 cm. Make a scale drawing, with 1 cm for 10 cm. What angle is between the 30 cm and 40 cm sides?



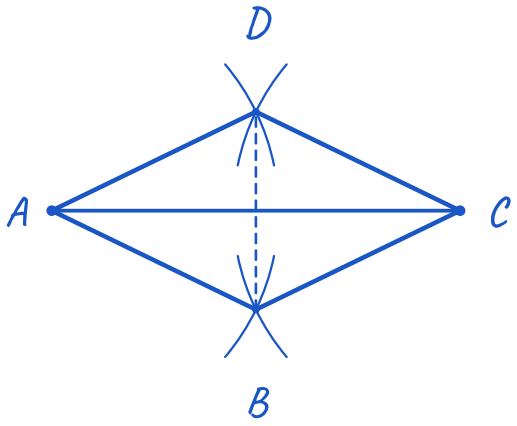
Angle = *90°, a right angle*

Constructing a triangle from three sides *further practice*

ANSWERS

13

Construct the rhombus ABCD with sides of 3 cm and the diagonal AC = 5.4 cm.
Then measure the diagonal BD.



BD = 2.6 cm (accept 2.4 to 2.8)

14

Which of these sets of lengths make a triangle? Explain each one.

a) 3 cm, 4 cm, 8 cm — No: 3 + 4 = 7, less than 8

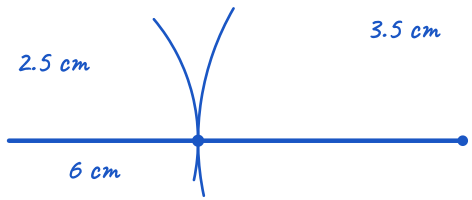
b) 5 cm, 5 cm, 9 cm — Yes: 5 + 5 = 10, more than 9

c) 2.5 cm, 6 cm, 3 cm — No: 2.5 + 3 = 5.5, less than 6

Answer Only b)

15

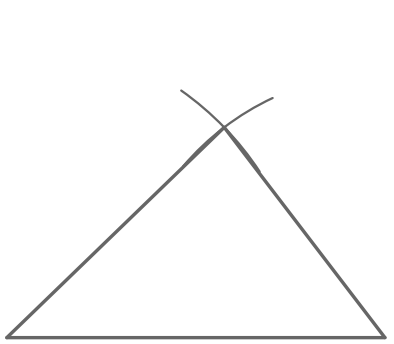
Ali says he can construct a triangle with sides of 2.5 cm, 3.5 cm and 6 cm.
Is he right? Explain.

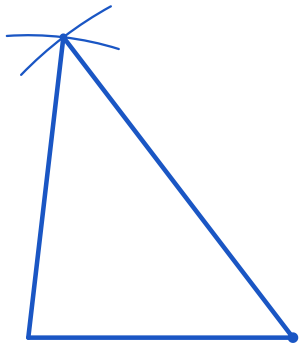


Answer No. 2.5 + 3.5 = 6, so the arcs only meet on the base. The triangle would be flat.

16

Kai and Ella each construct a triangle with sides of 3.5 cm, 4 cm and 5 cm.
Kai uses 5 cm as the base. Ella uses 3.5 cm. Will their triangles be the same? Explain.


Kai


Ella

Answer Yes. Three sides fix the triangle, so they are congruent. Ella's is Kai's turned round.