S2

CFE Level 3

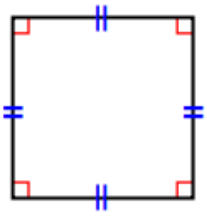
Working at Home Workbook

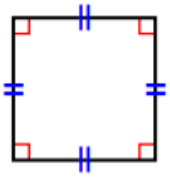
2 Dimensions

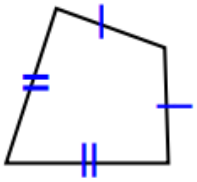
Learning Intention. To be able to -
Recognise and know names of polygons
Given 2 sides and the included angle, be able to draw a triangle
Given 2 angles and a side, be able to draw a triangle
Given the length of its 3 sides be able to draw the triangle
Draw quadrilaterals and regular polygons

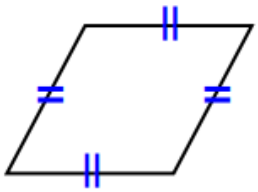
Recognise and know names of polygons

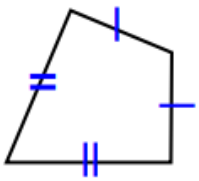
Questions 1

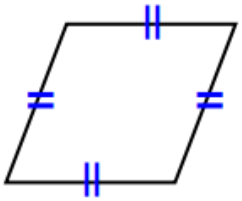
1) 

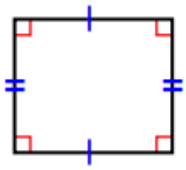
2) 

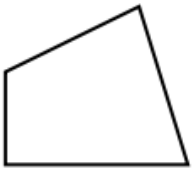
3) 

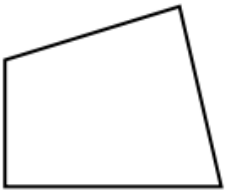
4) 

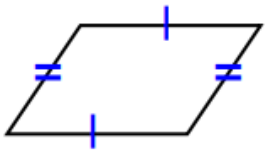
5) 

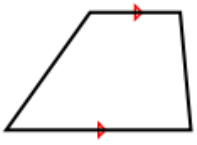
6) 

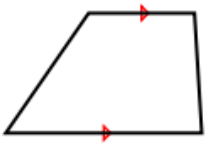
7) 

8) 

9) 

10) 

11) 

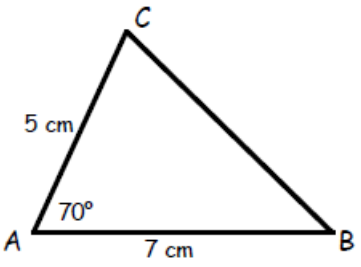
12) 

Given 2 sides and the included angle, be able to draw a triangle

Questions 2

1. On the right is a sketch of ΔABC.
Follow the instructions to draw it accurately :-

Step 1 :-	Draw line AB = 7 cm
Step 2 :-	Put your protractor at A and mark (with an X) an angle of 70°.
Step 3 :-	Draw line AC, from A through the X, to point C. (*Make sure it is 5 centimetres long*).
Step 4 :-	Join C to B to complete the triangle.



2. Draw the following triangles as accurately as you can.

Measure the third angle of each triangle, then check your accuracy by calculation.

(Remember: $\angle A^\circ + \angle B^\circ + \angle C^\circ = 180^\circ$)

(a) Triangle KLM, with KL = 7cm, ∠KLM = 54° and ∠LKM = 67°.

(b) Triangle EFG, with EG = 9.4cm, ∠FEG = 116° and ∠FGE = 32°.

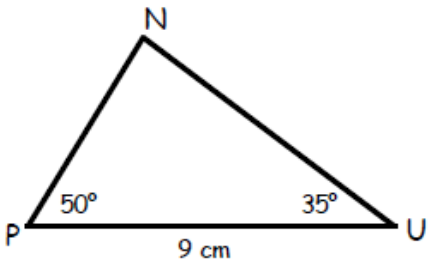
(a) Triangle TUV, with UV = 8.6cm, ∠UVT = 83° and ∠UTV = 41°.

<u>Given 2 angles and a side, be able to draw a triangle</u>

Questions 3

1. Shown is a rough sketch of ΔPUN.
Follow the instructions to draw it accurately :-

Step 1 :-	Draw line PU = 9 cm
Step 2 :-	Put your protractor at P and mark (with an X) an angle of 50°.
Step 3 :-	Draw a line from P through the X.
Step 4 :-	Put your protractor at U and mark (with an X) an angle of 35°.
Step 5 :-	Draw a line from U through the X, to meet your first line at point N.



2. Draw the following triangles as accurately as you can.

In each case, measure the length of the third side of each triangle.

(a) Triangle ACE, with AC = 9cm, CE = 7.8cm and ∠LKM = 72°.

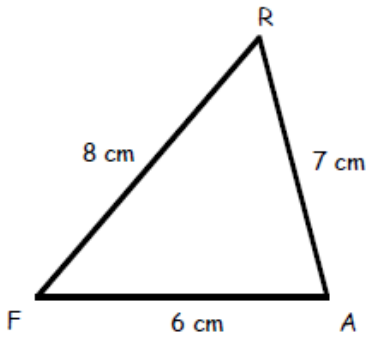
(b) Triangle NOP, with PO = 7cm, PN = 8.6m and ∠NPO = 105°.

(a) Triangle XYZ, with XZ = 8cm, XY = 8cm and ∠YXZ = 135°.

Given the length of its 3 sides be able to draw the triangle

Questions 4

1.



Shown is a sketch of ΔFAR.
Draw it accurately using the following instructions :-

Step 1 :-	Draw line FA = 6 cm
Step 2 :-	Set your compasses to 8 cm, place the compass point on F and draw a light arc.
Step 3 :-	Now set your compasses to 7 cm, place the compass point on A and draw a 2nd arc.
Step 4 :-	Call this point where the arcs meet R and join R to F and to A.

2. Draw the following triangles as accurately as you can.

In each case, measure the size of the largest angle in the triangle.

(a) Triangle DEF, with DE = 10cm, EF = 6.5cm and DF = 12cm..

(b) Triangle VWX, with VX = 8.6cm, XW = 9.2cm and VW = 6.5cm..

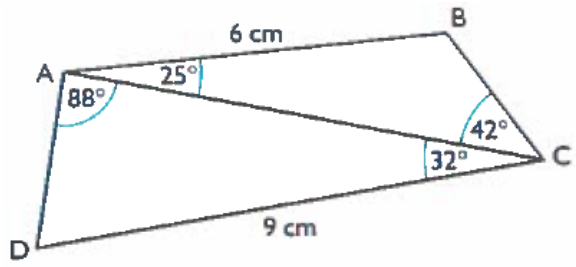
(c) Triangle KLM, with KL = LM = 7cm and KM = 8cm..

Draw quadrilaterals and regular polygons

Questions 5

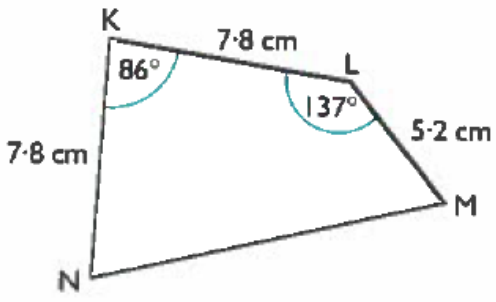
1. a) Draw quadrilateral ABCD as accurately as you can.

b) Measure the angles at B and D.



2. a) Draw quadrilateral KLMN as accurately as you can.

b) Measure the length of side MN.



3.

Bisecting a line at right angles

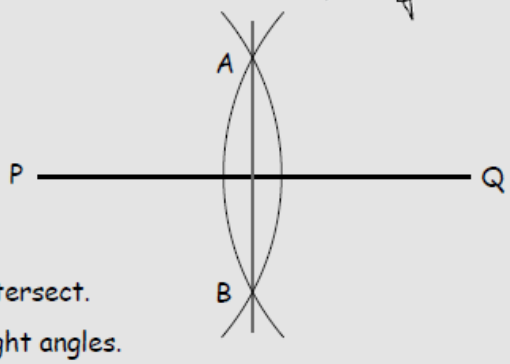
We want to find the midpoint of line PQ.

Step 1 :- Set your compasses to a size larger than half of PQ.

Step 2 :- Draw an arc, centre P and another arc, centre Q (**with same radius**).

Step 3 :- Join the 2 points (A and B) where the arcs intersect.

This line AB will bisect PQ, and does so at right angles.



(a) Draw a line AB. Find its mid-point.

(b) Draw a line KL, about 8 cm long. Show how to create an equilateral triangle KLM.

4. Draw a kite with sides 6 cm, 6 cm, 10 cm, 10 cm.

The angle between the 2 smaller sides is to be 120°.

5. (a) Make a neat, accurate drawing of this trapezium.

(b) Measure the length of the BC and CD sides.