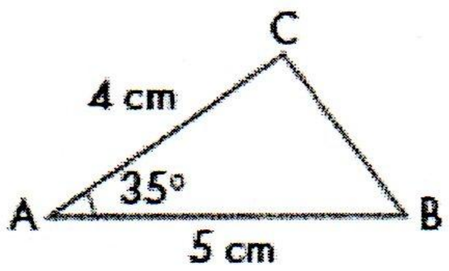
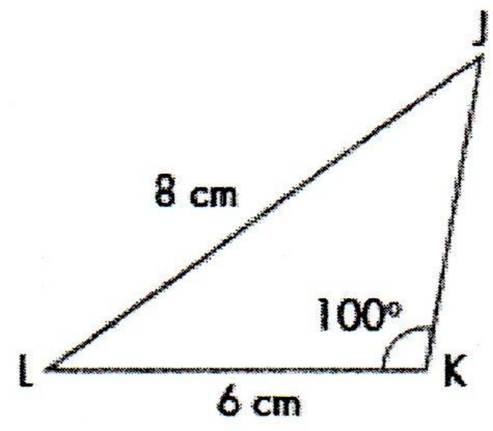
Construction

Q1. Draw the angle of 60^0

Q2. Draw the straight line CD of 5 cm.

Q3. Draw the following triangles accurately and measure the sides and angles not given in the diagram.





Q4. Draw a triangle ABC, where AB = 7 cm, BC = 6 cm and AC = 5 cm.

b Measure the sizes of □angles ABC, □BCA and □CAB.

Q5. Draw an isosceles triangle that has two sides of length 7 cm and the included angle of 50°.

a Measure the length of the base of the triangle.

b What is the area of the triangle?

Line Bisector

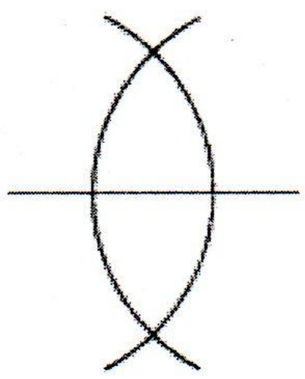
To construct a line bisector

It is usually more accurate to construct a line bisector than to measure its position (the midpoint of the line).

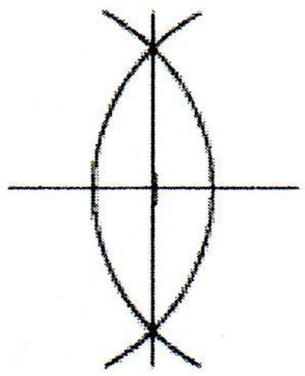
- **Step 1:** Here is a line to bisect

_____

- **Step 2:** Open your compasses to a radius of about three-quarters of the length of the line. Using each end of the line as a centre, and without changing the radius of your compasses, draw two intersecting arcs.



- **Step 3:** Join the two points at which the arcs intersect. This line is the **perpendicular bisector** of the original line.



Draw the bisector on following lines.

Q6. Draw a line 7 cm long and bisect it. Check your accuracy by seeing if each half is 3.5 cm.

Q7.a Draw any triangle with sides that are between 5 cm and 10 cm.

b On each side construct the line bisector.
All your line bisectors should intersect at the same point.

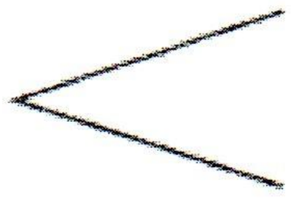
c Using this point as the centre, draw a circle that goes through each vertex of the triangle.

Angle Bisector

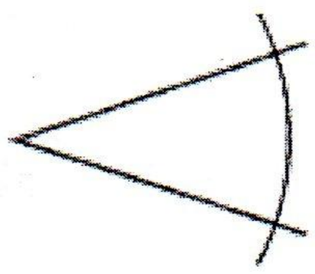
To construct an angle bisector

It is much more accurate to construct an angle bisector than to measure its position.

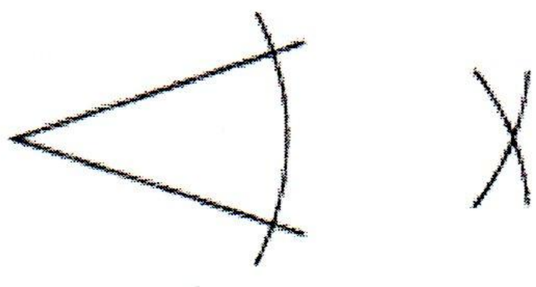
- **Step 1:** Here is an angle to bisect.



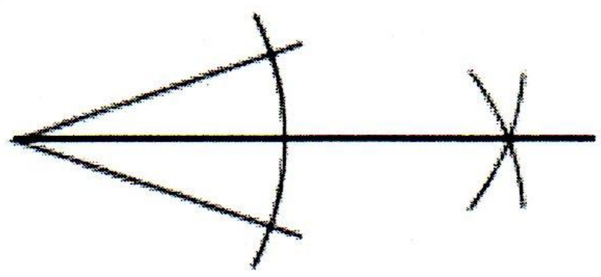
- **Step 2:** Open your compasses to any reasonable radius that is less than the length of the shorter line. If in doubt, go for about 3 cm. With the vertex of the angle as centre, draw an arc through both lines.



- **Step 3:** With centres at the two points at which this arc intersects the lines, draw two more arcs so that they intersect. (The radius of the compasses may have to be increased to do this.)



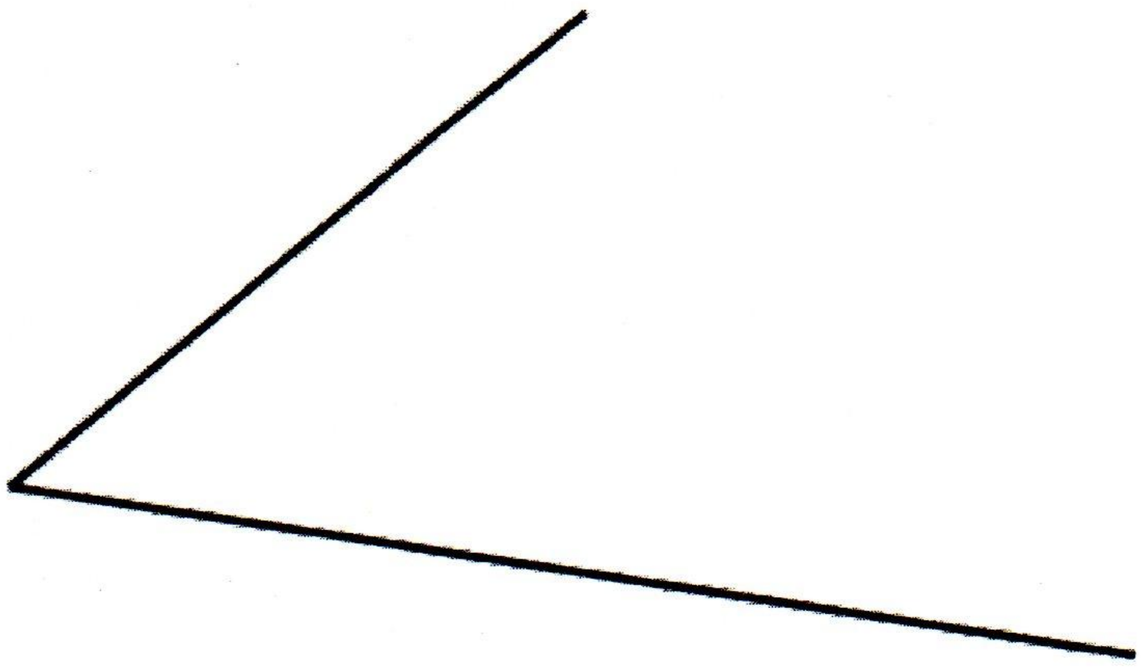
- **Step 4:** Join the point at which these two arcs intersect to the vertex of the angle. This line is the **angle bisector**.



Q8. Draw the following angles and construct the bisector of the angles. Check how accurate you have been by measuring each half.

a) 60^0 b) 90^0 c) 120^0

Q9. Use ruler and compasses to **construct** the bisector of this angle.
You must show all your construction lines.



Q10) Measure, in centimetres, the length of the line *AB*.

A ——————————————— B ..... cm

(b) Mark the midpoint of the line *AB* with a cross (x).

Q11) Here is a point *P* marked with a cross (×).
P ×
(a) Draw a line 7 cm long.
Start from the point *P*.

(b) On your line, mark with a cross (×) the point which is 3 cm from *P*.
Label this point *Q*.

Draw the following straight line and construct the perpendicular bisector of the lines.

Q12. AB = 7 cm

Q13. BC = 5 cm

Q14. PQ = 10 cm

Q15. MN = 8.5 cm