## Rhombus

The actions for constructing or building a rhombus are closely the same as for a parallelogram however, in the case of a rhombus, all four sides are equal.

## Example

a) Using rulers and compasses only, construct a rhombus HIJK with HI= 9.5cm and <KHI= 60°. Show all construction lines clearly.

b) Let the point of intersection of the diagonals be represented by O.

Measure and state the length of:

(i) HO (ii) IO (iii) JO (iv) KO

(v)Measure and state the magnitude of angle HOI. State your observation.

c) Measure and state the magnitude of angles:

(i) OHI (ii) OIH

d) Examine  $\Delta$ s HOI, JOI, JOK and HOK.

State your observation.

Below can be seen the sketch of the rhombus HIJK to be built





## Construction:

In constructing the rhombus,  $\langle KHI = \langle JIX = 60^{\circ}$  (corres.  $\langle s \rangle$ ). And the radius of the compasses is set to 9.5 cm to construct its sides.



b) By measurement:

- (i) The length of HO = 8.2cm
- (ii) The length of IO = 4.75cm
- (iii) The length of JO = 8.2 cm
- (iv)The length of KO = 4.75
- So HO = JO = 8.2cm
- And IO = KO =4.75cm
- (v)The magnitude of angle HOI = 90° = 1rt. <

Hence the diagonals bisect each other at right angles.

c) By measurement:

- (i) The magnitude of angle OHI = 30  $^{\circ}$
- (ii) The magnitude of angle  $OIH = 60^{\circ}$

Hence the diagonals bisect the angles at the vertices.

d) Now  $\triangle HOI \equiv \triangle JOI \equiv \triangle JOK \equiv \triangle HOK$  (S.S.S)

Hence four congruent triangles are formed by the diagonals.