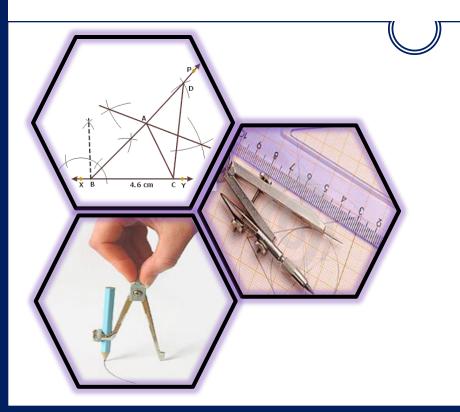
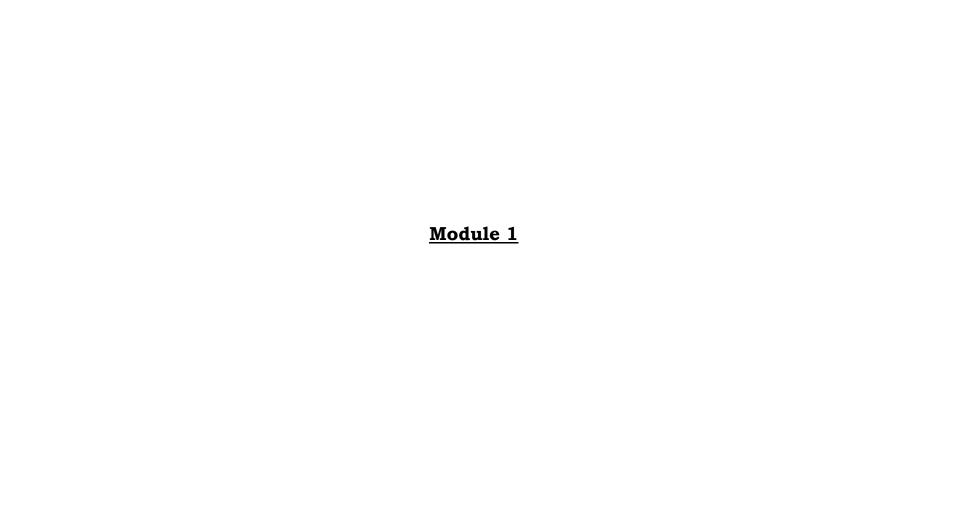
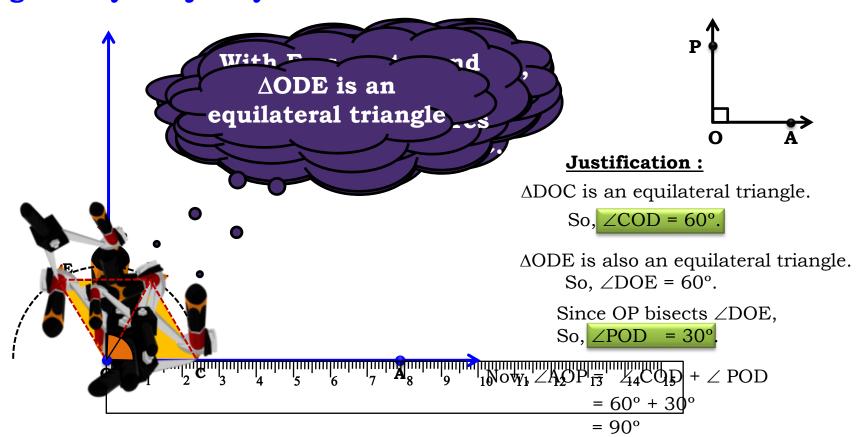
Constructions

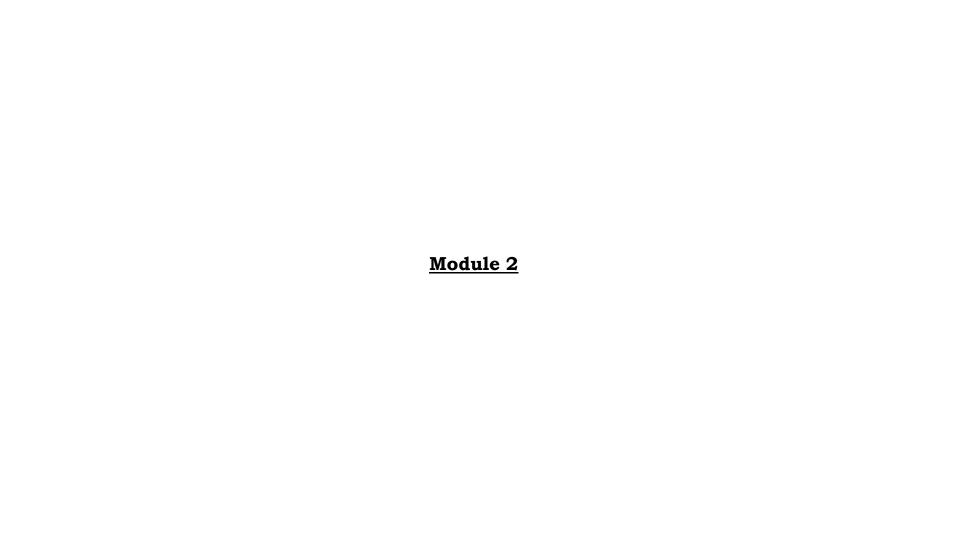




Q. Construct an angle of 90° at the initial point of a given ray and justify the construction.

Rough fig.





Q. Construct an angle of 45° at the initial point of a given ray and justify the construction

Soln.

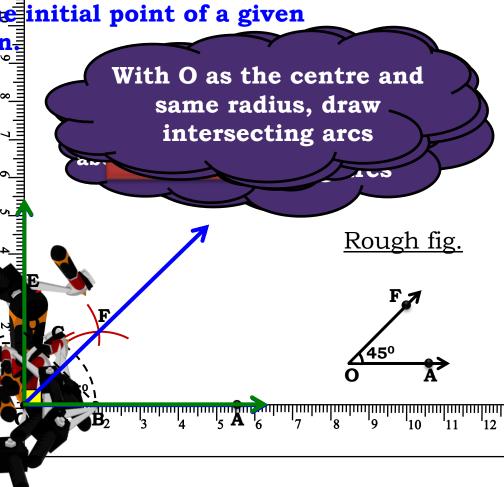
Justification:

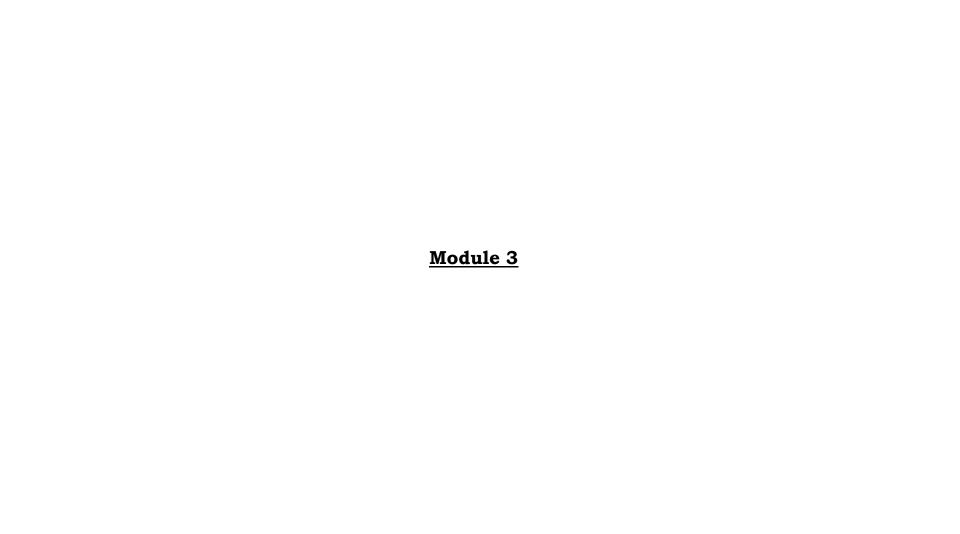
By construction, $\angle AOE = 90^{\circ}$ and OF is the bisector of $\angle AOE$

$$=\frac{1}{2}\times 90^{6}$$

$$=45^{\circ}$$

$$\therefore$$
 $\angle AOF = 45^{\circ}$



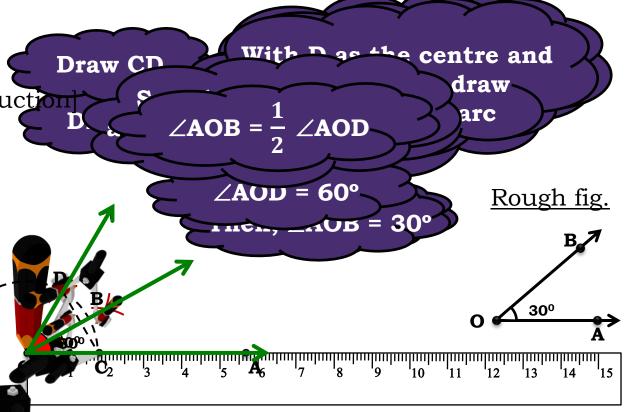


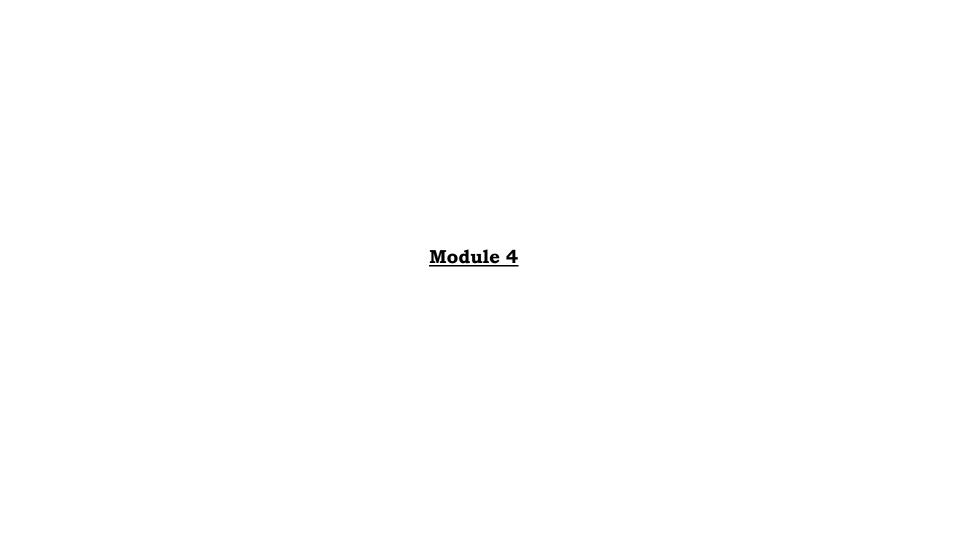
Q. Construct the angles of the following measurements:



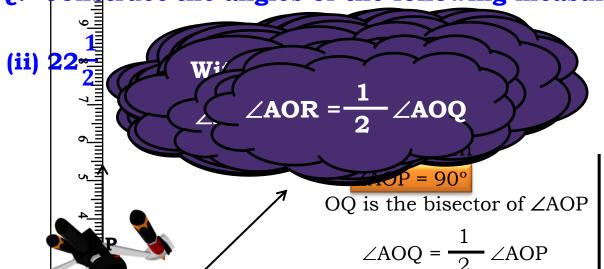
Justification:

$$\angle AOD = 60^{\circ}$$
 [Construction]
 $\angle AOB = \frac{1}{2} \angle AOD$
 $= \frac{1}{2} \times 60^{\circ}$

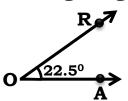




Q. Construct the angles of the following measurements:



Rough fig.

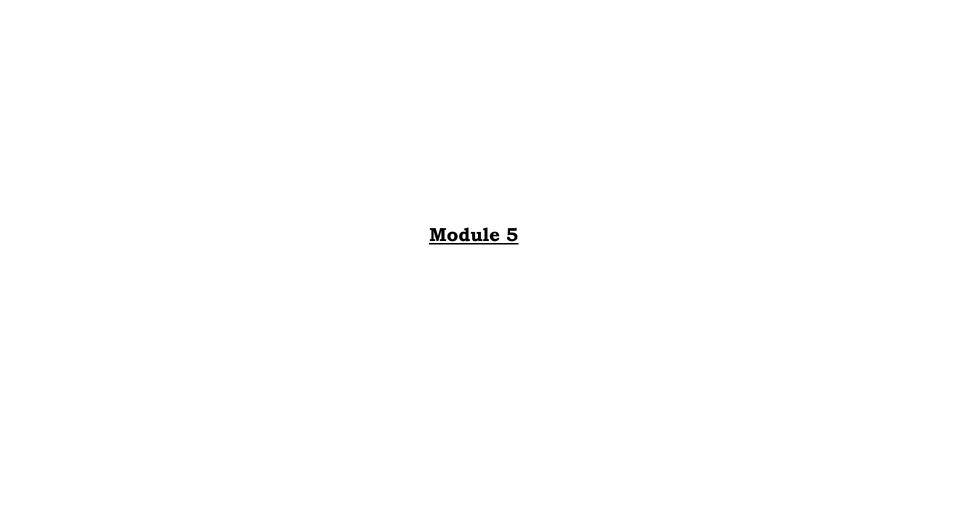


OR is the bisector of ∠AOQ

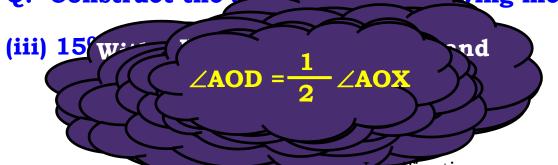
$$\angle AOR = \frac{1}{2} \angle AOQ$$
$$= \frac{1}{2} \times 45$$

$$\therefore$$
 \angle AOR = 22.5°

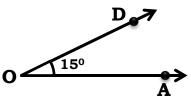
$$oldsymbol{B}_2$$
 3 4 5 $oldsymbol{A}_6$ 7 8 9 10 11 12 13 14 1







Rough fig.



Justification

 $\angle AOB = 60^{\circ}$

 $C_2 = 30^{\circ}$

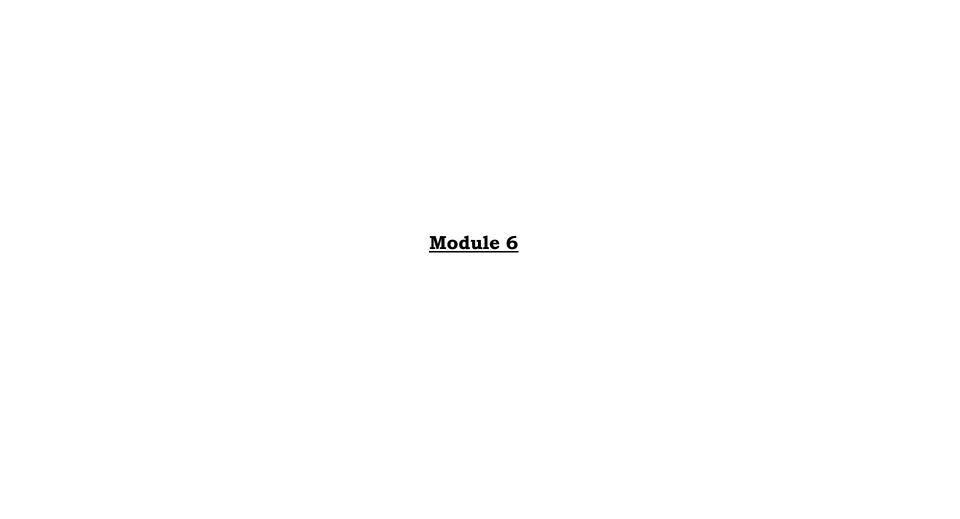
OX is the bisector of ∠AOB

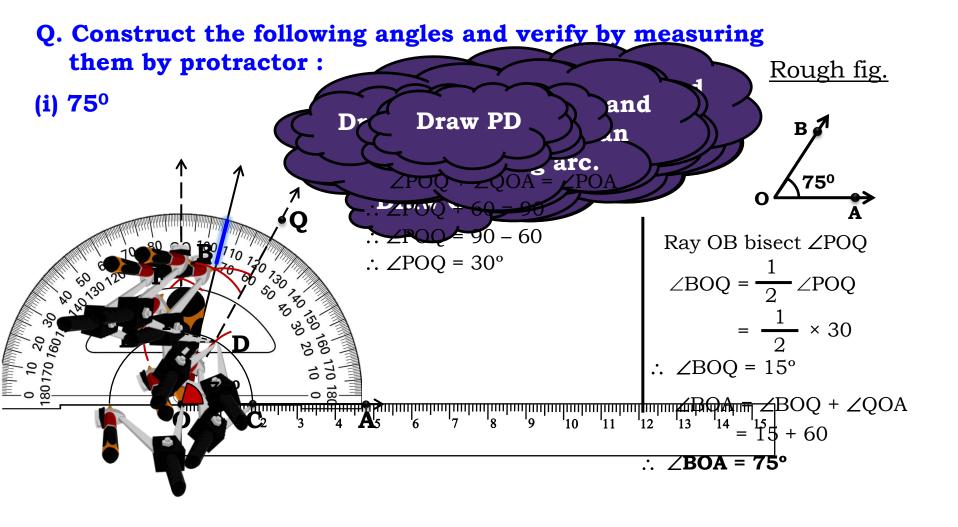
$$\angle AOX = \frac{1}{2} \angle AOB$$
$$= \frac{1}{2} \times 60$$

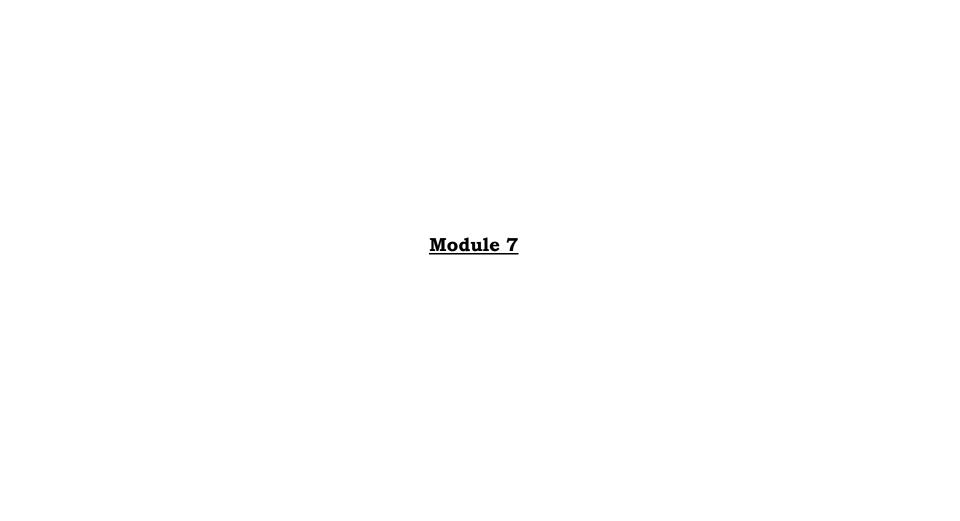
OD is the bisector of $\angle AOX$

$$\angle AOD = \frac{1}{2} \angle AOX$$
$$= \frac{1}{2} \times 30$$

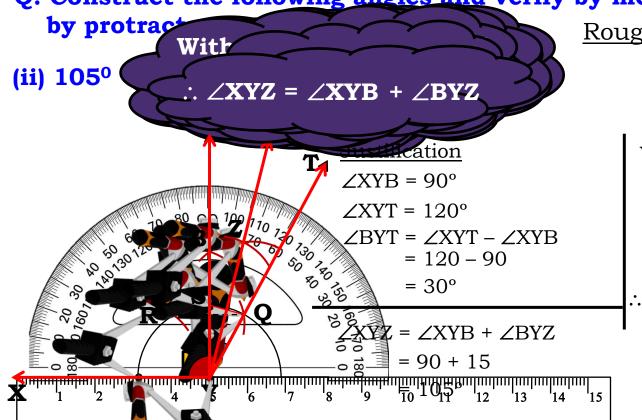
$$\therefore$$
 \angle AOD = 15°

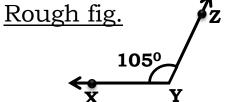






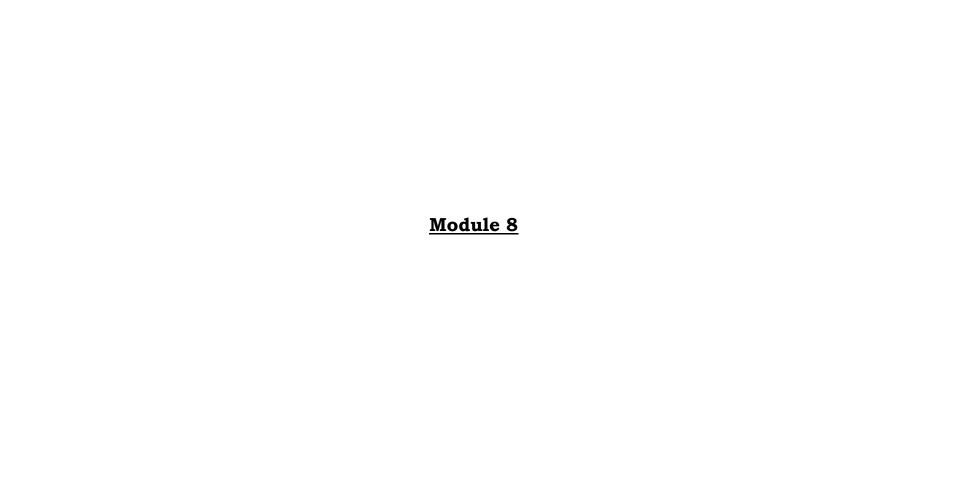
Q. Construct the following angles and verify by measuring them

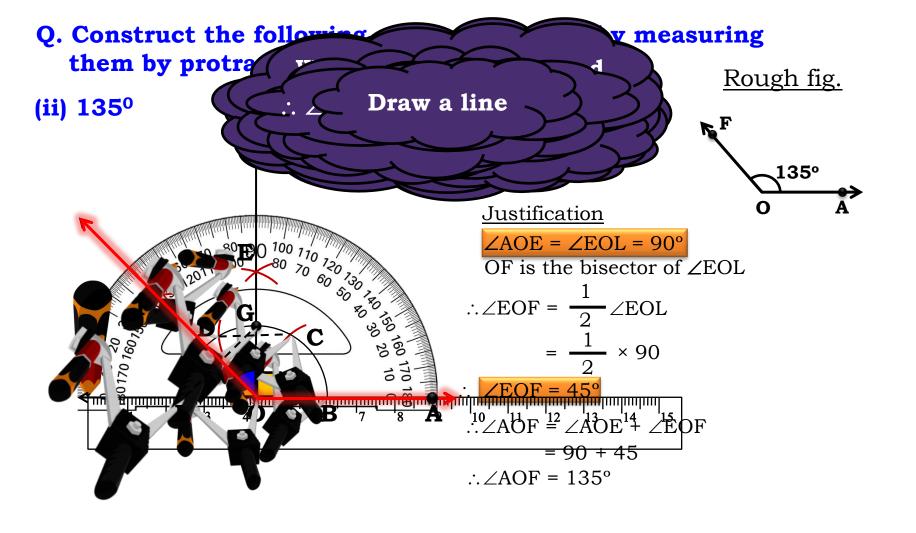


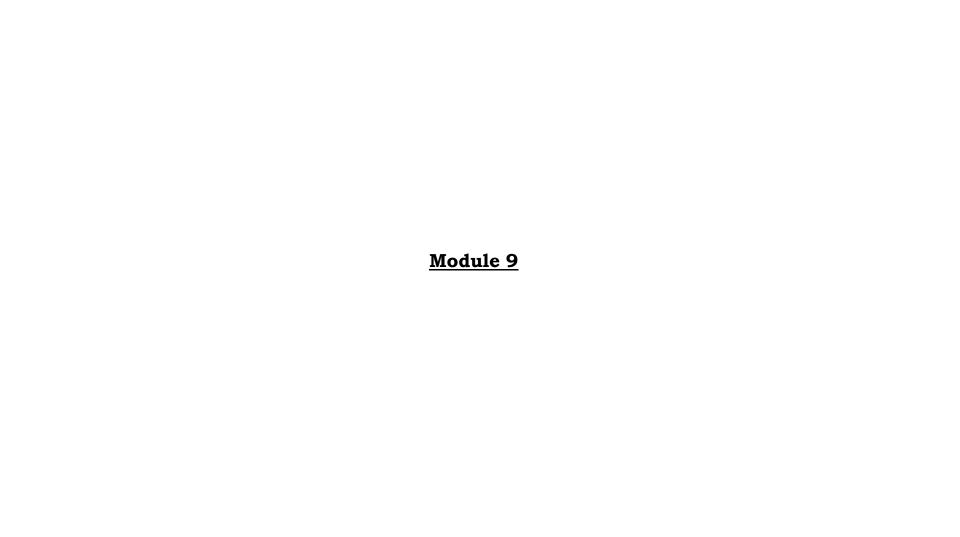


YZ is the bisector of ∠BYT

$$\angle BYZ = \frac{1}{2} \angle BYT$$
$$= \frac{1}{2} \times 30$$





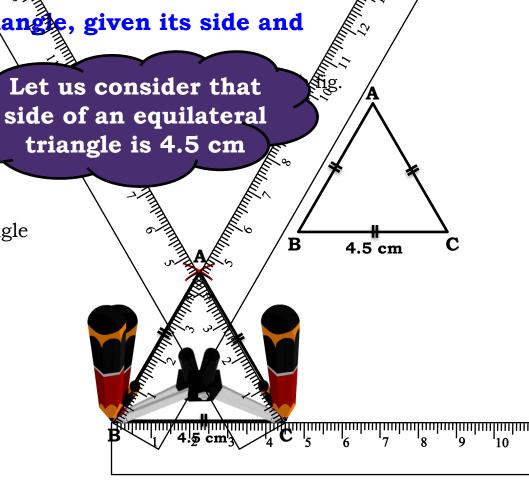


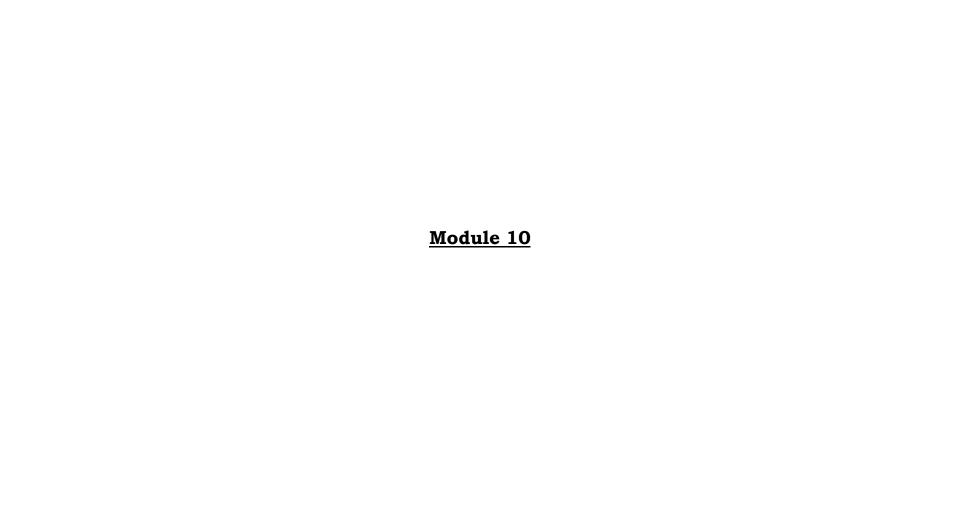
Q. Construct an equilateral triangle, given its side and justify the construction

Let us consider that

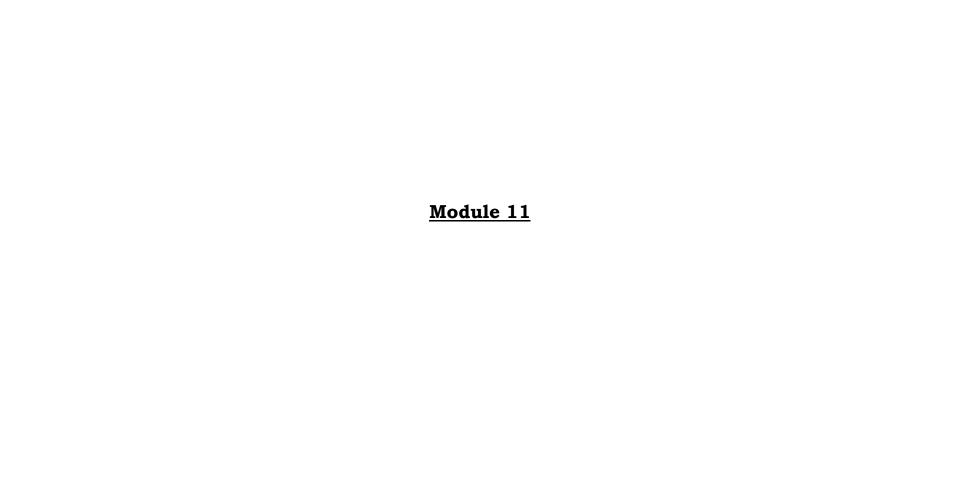
Now, with C as centre and same radius (4.5cm), Draw an intersecting arc

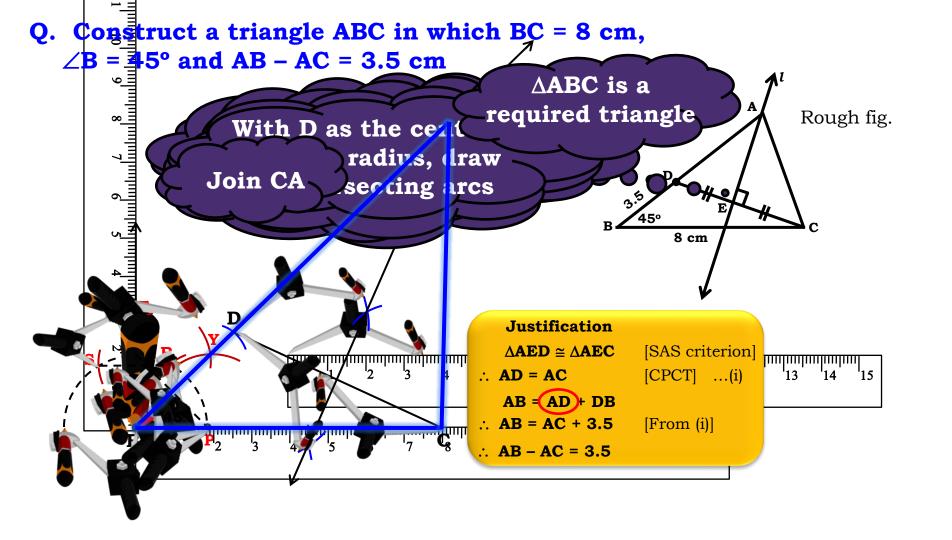
Draw an arc

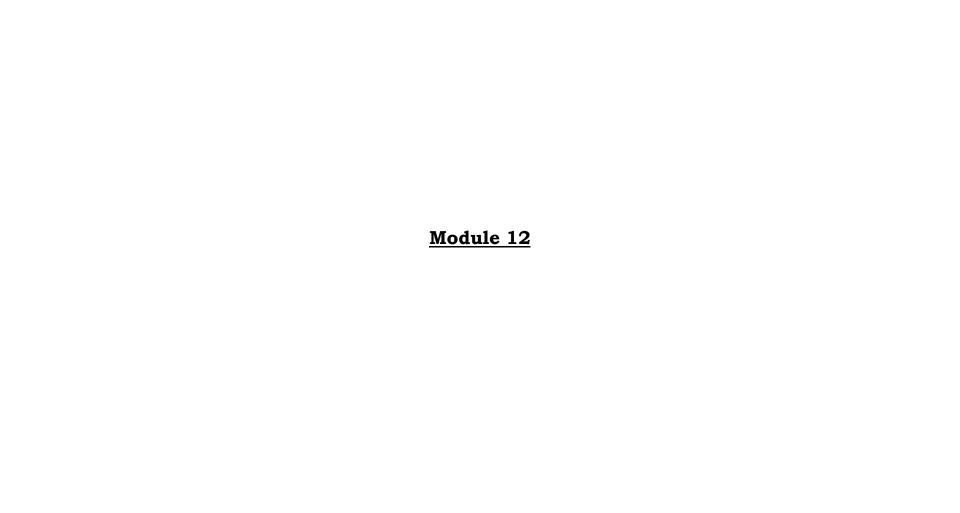




Q. Construct a triangle ABC in which BC = 7 cm, \angle B = 75° and AB + AC = 13 cm**Justification** [SAS criterion] $\triangle AED \cong \triangle AEC$ Draw perpendicular With C as the c : AD = AC [CPCT] bisector of CD AB + AD = BDradius more tha \therefore AB + AD = 13 cm CD, draw \therefore AB + AC = 13 cm With D as the centre and same radius, draw intersecting arcs







Q. Construct a triangle PQR in which QR = 6 cm, $\angle Q = 60^{\circ}$ and PR - PQ = 2 cm.

