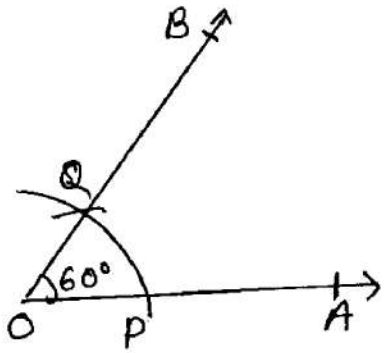
Exercise 19.6

Q.1 Construct an angle of 60° with the help of compasses and bisect it by paper folding.

Solution :



Students have to do by themselves the paper folding activity.

Q.2 Construct the following angles with the help of ruler and compasses only.

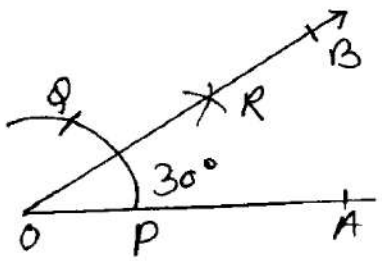
(i) 30° (ii) 90° (iii) 45° (iv) 135°

(v) 150° (vi) 105°

Solution: (i) 30°

For 30°, we Draw the bisector of angle 60°.

$\therefore \angle AOB = 30°$



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(ii) 90°. (i) Draw a line segment AB.

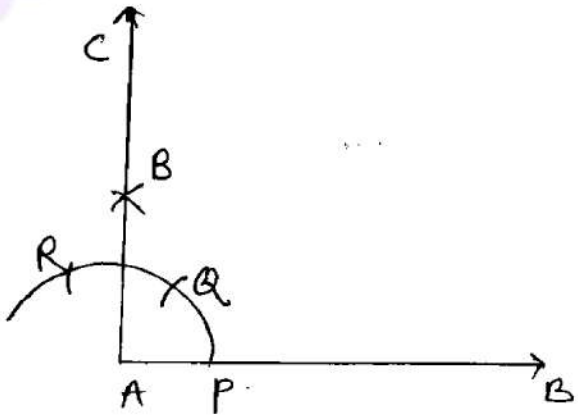
(ii) With A as centre and any convenient radius, draw an arc, cutting OA at P.

(iii) With P as centre and the same radius, draw an arc cutting the arc drawn in step II at Q.

(iv) With Q as centre and the same radius, draw an arc, cutting the arc drawn in step V

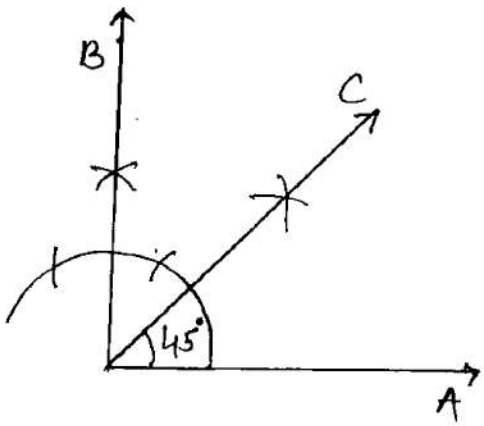
(v) With R as centre and the same radius, draw an arc, cutting the arc drawn in step V at B.

(vi) Draw OB and produce it to C. ∠AOC is the angle measure 90°.



(iii) 45°

For construct an angle of 45°, we draw an angle bisector of 90°.



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(iv) 135° To construct an angle 135°, we draw bisector of angle between , and

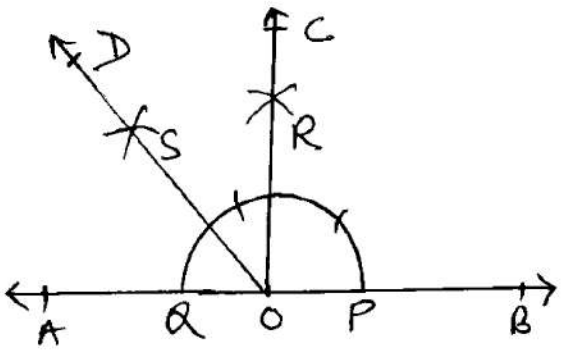
(i) Construct a line AB and Mark a point O in the Middle of AB.

Taking O as centre and convenient radius, Construct an arc which cuts the line AB at the points P and Q.

Draw an angle 90° on the ray OB as $\angle BOC = 90°$, where OC cuts the arc at the point R.

Taking Q and R as centre and radius which is more than half of QR, construct two arcs which cuts each other and name it as point S.

Construct OS and extend it to the point D to form ray OD. Hence $\angle BOD = 135°$



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(v) 150°

(i) Construct a line AB and mark a point O in the middle of AB

Taking O as centre and suitable radius draw an arc which cuts the line AB at the points P and Q.

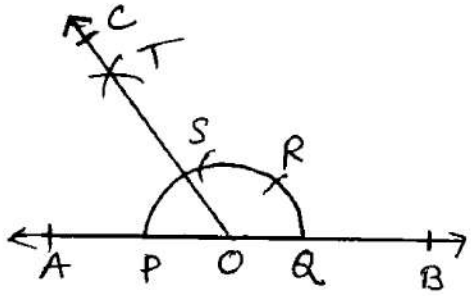
Taking Q as centre and same radius draw an arc which cuts the previous arc and name it as point R.

Taking R as centre and same radius draw an arc which cuts the previous arc and name it as point S.

Taking P and S as centre and radius which is more than half of PS, construct two arcs which cuts each other and name it as point T.

Construct OT and extend it to the point C to form the ray OC.

Here $\angle BOC = 150^\circ$



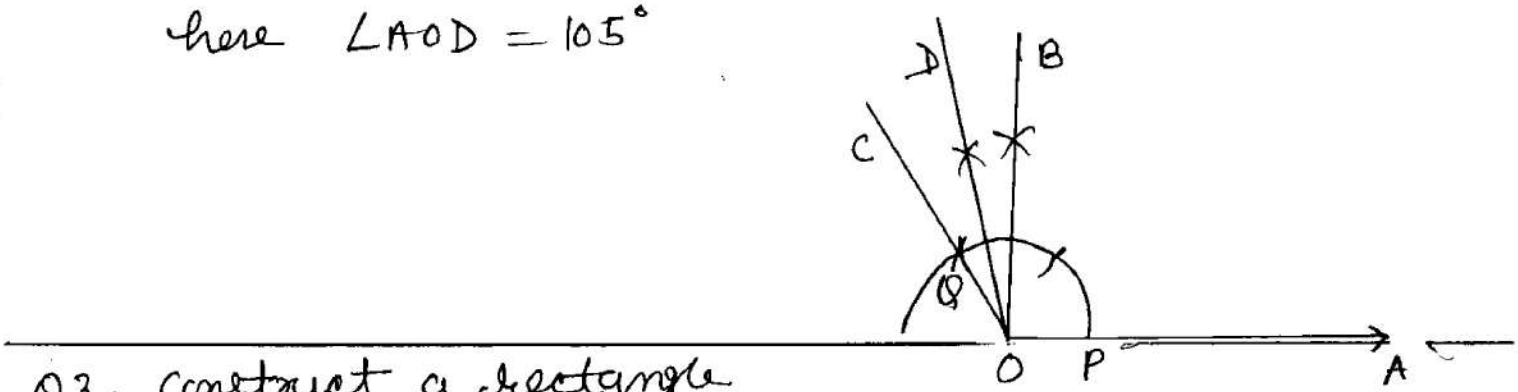
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(VI) 105° Construct a ray OA and make $\angle AOB = 90°$ and $\angle AOC = 120°$.

Bisect $\angle BOC$ and get the ray OD

Here $\angle AOD = 105°$



Q3, Construct a rectangle whose adjacent sides are 8 Cm and 3 Cm.

Solution (i) Construct a line segment AB = 8 cm.

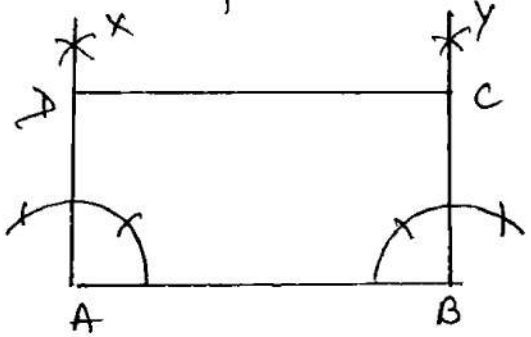
(ii) Draw $\angle BAX = 90°$ at A and $\angle ABY = 90°$ at B.

(iii) With the help of compasses and ruler, mark a point D on the ray AX where AD = 3Cm.

In the same way mark the point C on the ray BY where BC = 3 cm.

Construct the line segment CD

Here, ABCD is the required rectangle.



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