

## Exercise 19.4

### Question: 1

Construct the following angles with the help of protractor:

$45^\circ$ ,  $67^\circ$ ,  $38^\circ$ ,  $110^\circ$ ,  $179^\circ$ ,  $98^\circ$ ,  $84^\circ$ .

### Solution:

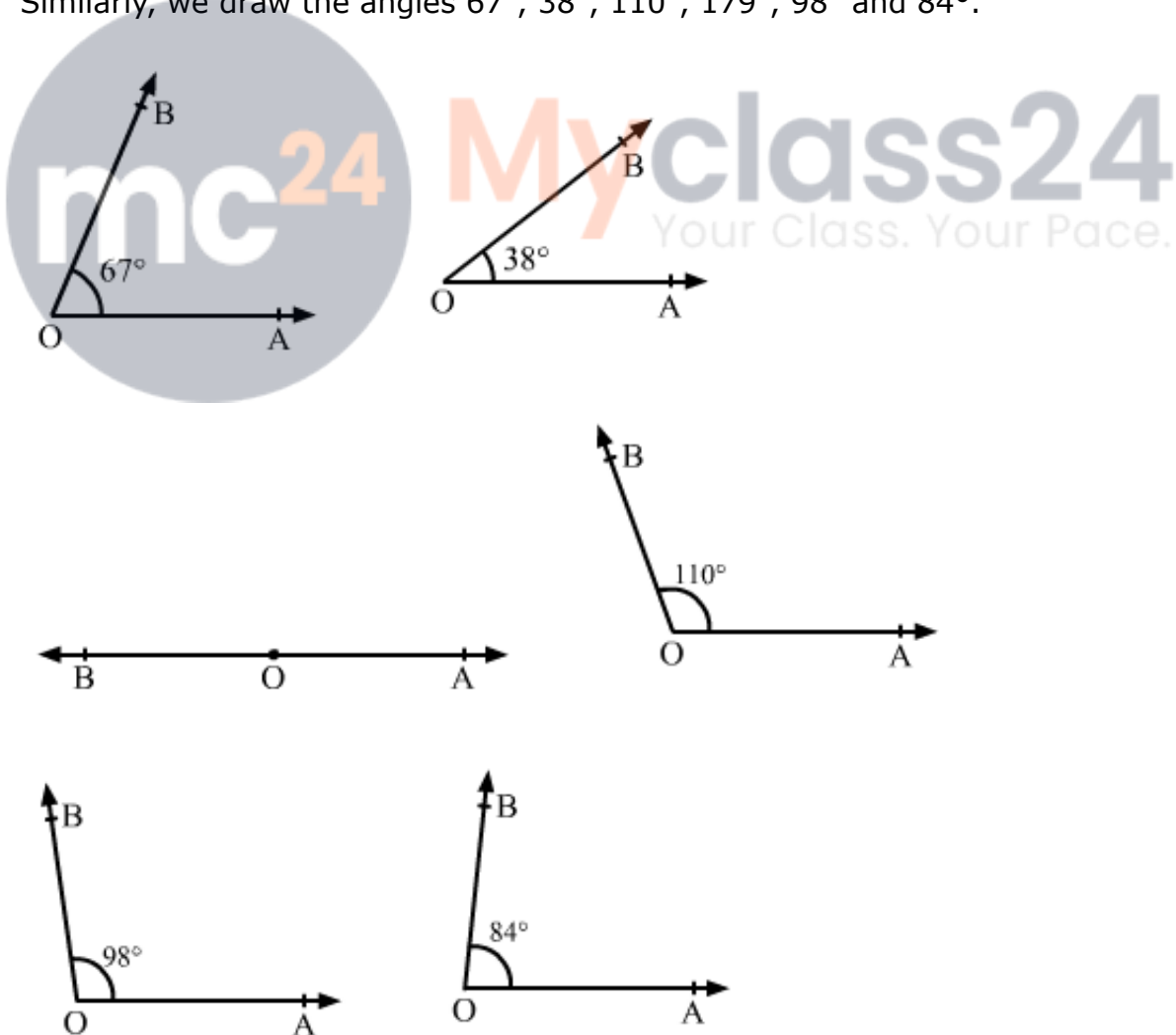
We draw a ray OA.

We place the protractor on OA such that its center coincides with the point O and the diameter of the protractor coincides with OA.

We mark a point B against the mark of  $45^\circ$  on the protractor.

We remove the protractor and draw OB.  $\angle AOB$  is the required angle of  $45^\circ$ .

Similarly, we draw the angles  $67^\circ$ ,  $38^\circ$ ,  $110^\circ$ ,  $179^\circ$ ,  $98^\circ$  and  $84^\circ$ .



## Question: 2

Draw two rays PQ and RS as shown in figure. Using the protractor, construct angles of  $15^\circ$  and  $138^\circ$  with one arm PQ and RS respectively.

### Solution:

(i) Draw a ray PQ as given in the question.

Place the protractor on the ray PQ such that its center coincides with the point P and the diameter of the protractor coincides with PQ.

Mark a point B against the mark of  $15^\circ$  on the protractor.

Remove the protractor and draw PB.  $\angle QPB$  is the required angle of  $15^\circ$ .

(ii) Draw a ray RS as given in the question.

Place the protractor on ray RS such that its centre coincides with the point R and diameter of the protractor coincides with RS.

Mark a point T against the mark of  $138^\circ$  on the protractor.

Remove the protractor and draw RT.

$\angle SRT$  is the required angle of  $138^\circ$ .

