

## EXERCISE 11.1

1. With the help of a ruler and a compass it is not possible to construct an angle of :

(A)  $37.5^\circ$

(B)  $40^\circ$

(C)  $22.5^\circ$

(D)  $67.5^\circ$

**Solution:**

**(B)  $40^\circ$**

Explanation:

Considering Option (A):

$$37.5^\circ = \frac{1}{2} \times 75^\circ$$

$75^\circ$  can be constructed with the help of a ruler and a compass.

Considering Option (B):

$$40^\circ = \frac{1}{2} \times 20^\circ$$

This is not possible.

$20^\circ$  cannot be constructed with the help of a ruler and a compass.

Considering Option (C):

$$22.5^\circ = \frac{1}{2} \times 45^\circ$$

$45^\circ$  can be constructed with the help of a ruler and a compass.

Considering Option (D):

$$67.5^\circ = \frac{1}{2} \times 135^\circ = \frac{1}{2} \times (90^\circ + 45^\circ)$$

Both  $90^\circ$  and  $45^\circ$  can be constructed with the help of a ruler and a compass.

Hence, option (B), is not possible to construct an angle of  $40^\circ$  with the help of ruler and compass is the correct answer.