

## Exercise 11B

## Question 14:

Consider the triangle,  $\Delta$ PRQ.

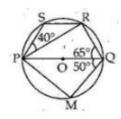
PQ is the diameter.

The angle in a semicircle is a right angle.

$$\Rightarrow \angle PRQ = 90^{\circ}$$

By the angle sum property in  $\triangle PRQ$ , we have,

$$\angle QPR + \angle PRQ + \angle PQR = 180^{\circ}$$
  
 $\Rightarrow \angle QPR + 90^{\circ} + 65^{\circ} = 180^{\circ}$   
 $\Rightarrow \angle QPR = 180^{\circ} - 155^{\circ} = 25^{\circ} \dots (1)$ 



Now consider the triangle  $\triangle PQM$ .

Since PQ is the diameter, ∠PMQ = 90°

Again applying the angle sum property in  $\triangle PQM$ , we have

$$\angle QPM + \angle PMQ + \angle PQM = 180^{\circ}$$

Now in quadrilateral PQRS

$$\Rightarrow$$
  $\angle QPR + \angle RPS + \angle PRQ + \angle PRS = 180^{\circ}$  [from (1)]