Exercise 11B

Question 14:

Consider the triangle, ΔPRQ.

PQ is the diameter.

The angle in a semicircle is a right angle.

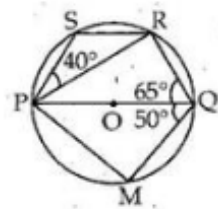⇒ ∠PRQ = 90°

By the angle sum property in ΔPRQ, we have,

∠QPR + ∠PRQ + ∠PQR = 180°

⇒ ∠QPR + 90° + 65° = 180°

⇒ ∠QPR = 180° − 155° = 25°   ....(1)

Now consider the triangle ΔPQM.

Since PQ is the diameter, ∠PMQ = 90°

Again applying the angle sum property in ΔPQM, we have

∠QPM + ∠PMQ + ∠PQM = 180°

⇒ ∠QPM + 90° + 50° = 180°

⇒ ∠QPM = 180° − 140° = 40°

Now in quadrilateral PQRS

∠QPS + ∠SRQ = 180°

⇒ ∠QPR + ∠RPS + ∠PRQ + ∠PRS = 180°   [from (1)]

⇒ 25° + 40° + 90° + ∠PRS = 180°

⇒ ∠PRS = 180° − 155° = 25°

∴ ∠PRS = 25°

********** END *********