

Mathematics

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(Chapter – 6) (Lines and Angles)(Exemplar Problems)

(Class – IX)

Exercise 6.1

Write the correct answer in each of the following:

Question 1:

In Fig. 6.1, if $AB \parallel CD \parallel EF$, $PQ \parallel RS$, $\angle RQD = 25^\circ$ and $\angle CQP = 60^\circ$, then $\angle QRS$ is equal to

- (A) 85° (B) 135°
(C) 145° (D) 110°

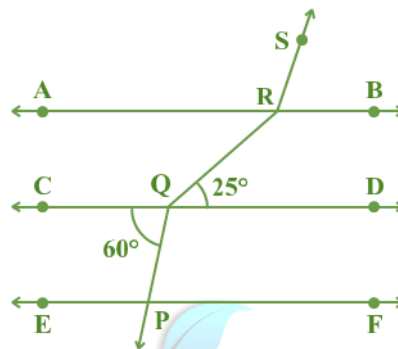


Fig. 6.1

Answer 1:

(C) 145°

Solution:

Given that:

$$PQ \parallel RS$$

$$\therefore \angle PQC = \angle BRS = 60^\circ$$

[alternate exterior angles and $\angle PQC = 60^\circ$]

and $\angle DQR = \angle QRA = 25^\circ$

[alternate interior angles and $\angle DQR = 25^\circ$]

$$\begin{aligned} \therefore \angle QRS &= \angle QRA + \angle ARS \\ &= \angle QRA + (180^\circ - \angle BRS) && \text{[linear pair]} \\ &= 25^\circ + 180^\circ - 60^\circ \\ &= 205^\circ - 60^\circ \\ &= 145^\circ \end{aligned}$$

Hence, the option (C) is correct.

