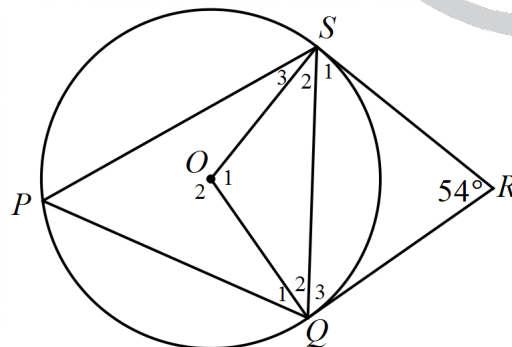


Question 1 (8 marks)



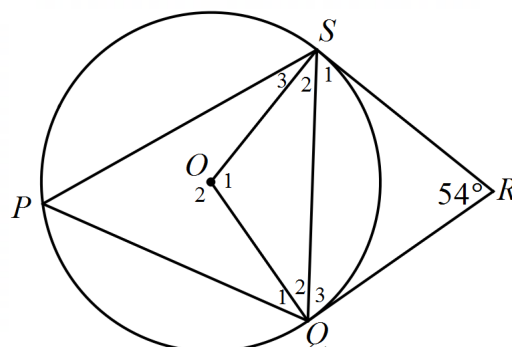
Candidate A

- 1.1 $RS = RQ$
 $\therefore \hat{Q}_3 = 63^\circ$ (isos Δ)
- 1.2 $\hat{P} = 63^\circ$ (tan chord)
- 1.3 $\hat{O}_1 = 31\frac{1}{2}^\circ$ ($\angle$ at centre = $2 \times \angle$ at circum)



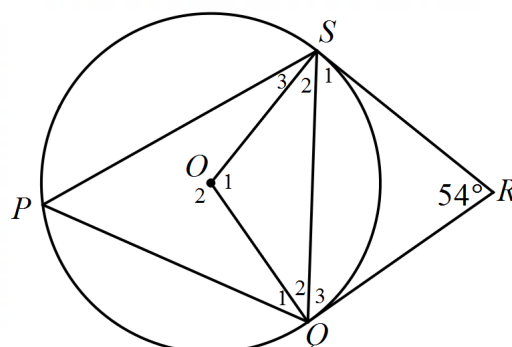
Candidate B

- 1.1 $\hat{P} = 126^\circ$ (opp $\angle$ s of cyc quad)
 $\therefore \hat{Q}_3 = 126^\circ$ (tan chord thm)
- 1.2 $\hat{P} = 126^\circ$ (proved above)
- 1.3 $\hat{O}_1 = 252^\circ$ ($\angle$ at centre = $2 \times \angle$ at circum)



Candidate C

- 1.1 $\hat{OSR} = 90^\circ$ (tan $\perp$ radius)
 $\hat{OQR} = 90^\circ$ (tan $\perp$ radius)
 $\therefore \hat{O}_1 = 126^\circ$ ($\angle$ sum of quad)
 $\therefore \hat{P} = 63^\circ$ ($\angle$ at centre = $2 \times \angle$ at circum)
 $\therefore \hat{Q}_3 = 63^\circ$ (tan chord thm)
- 1.2 $\hat{P} = 63^\circ$ (proved above)
- 1.3 $\hat{O}_1 = 126^\circ$ (proved above)



Candidate D

- 1.1 Draw OR
 $OSRQ$ is a kite.
 $\hat{QTR} = 90^\circ$ (diag of kite)
 $\hat{QRT} = 27^\circ$ (diag of kite)
 $\therefore \hat{Q}_3 = 63^\circ$ ($\angle$ sum of Δ)
- 1.2 $\hat{QOR} = 63^\circ$ (tan chord thm)
 $\therefore \hat{SOR} = 63^\circ$ (diag of kite)
 $\therefore \hat{P} = 63^\circ$ ($\angle$ at centre = $2 \times \angle$ at circum)
- 1.3 $\hat{O}_1 = 126^\circ$ (proved above)

