AI1110 Assignment I (ICSE Class 10 2018)

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Question 10b:

According to the question: In the figure given below O is the centre of the circle. If QR = OP and ∠ ORP = 20. Find the value of x giving reasons

I. SOLUTION

Let the radius of the circle be r.//
given OP = OR,
OP = OQ = QR = r,
IN Δ OQR, OQ = QR
∠ QOR = ∠ ORP = 20
Consider Δ OQR , An exterior angle of a triangle is equal to the sum of the two opposite interior angles//

$$\rightarrow \angle OQP = 40 \tag{1}$$

∠ OQP = ∠ QOR + ∠ ORQ

$$\rightarrow \angle OQP = 40 \tag{2}$$

consider Δ OPQ

∠ POQ = 180 - ∠OPQ -∠OQP $\implies$ 180 - 40 - 40

$$\rightarrow \angle POQ = 100 \tag{3}$$

now, ∠x +∠POQ +∠QOR = 180
A straight line//
∠ x +100+20 = 180
∠x = 180-120 = 60
hence, the value of x is 60

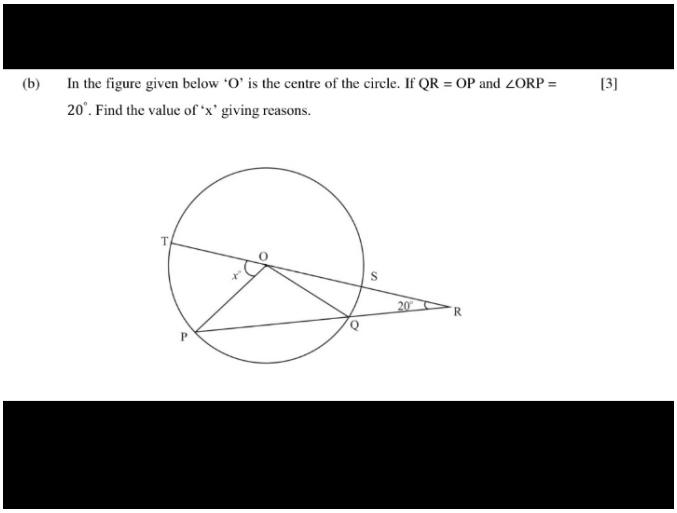

Fig. 1. Caption