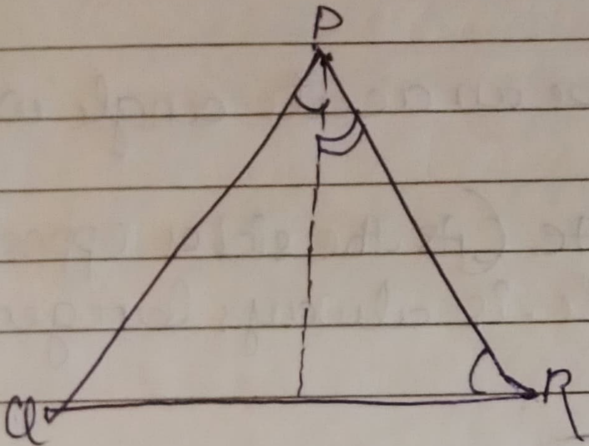
Q5) ans)



PR > PQ (given)
PQ and PS bisectors QPR (given)

To Prove →

∠PSR is smaller than ∠PSQ that is PSR > PSQ

proof →

QPS = PRS → ii (As PS bisects ∠QPR)

PQR > PRQ → (i) (since PR > PQ as angle opposite to the larger side is always larger)

PSR = PQR + QPS → (iii) (since the exterior angle of a triangle equals to the sum of opposite interior angles)

PSQ = PRQ + RPS → (iv) (As the exterior angle of a traingle equals to the sum of opposite interior angles)

By adding equation (i) and (ii)

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$PQR + QPS > PRQ + RPS$

Thus, from (i) (ii) (iii) and (iv),
we get $PSR > PSQ$

(6) ans) $AB < AC$

Proof:,

In ΔABC, $B = 90^\circ$

Now, we know that

$$A + B + C = 180^\circ$$

$\therefore A + C = 90^\circ$

Hence, C must be an acute angle which implies $C < B$

So, $AB < AC$ (As the sides opposite to the larger angle is always larger)

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