TRIANGLES

CLASS : IX   SUB : MATHEMATICS

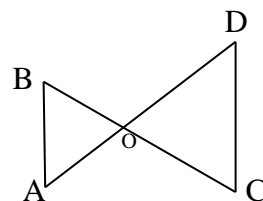## Choose the correct answer :

1. In a triangle ABC, $\angle A = \angle B = 62 \frac{1}{2}^{0}$ then the longest side is

   (a)   AC   (b)   BC   (c)   AB   (d)   None of these

2. In the given fig. $\angle B < \angle A$ and $\angle C < \angle D$ then the relation

   Between AD and BC is

   (a) $AD > BC$ (b) $AD < BC$ (c) $AD = BC$ (d) None of these

3. The difference between any two sides of a triangle is _____ to the third side.

   (a) greater   (b) 90^{0} (c) smaller   (d) None of these

4. $\angle x$ and $\angle y$ are exterior angles of a $\triangle ABC$ at the points B and C respectively.
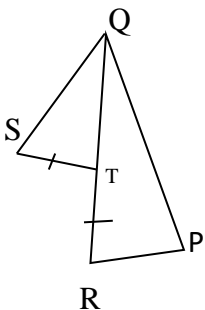
   Also $\angle B > \angle C$, then the relation between $\angle x$ and $\angle y$ is

     (a) $\angle x > \angle y$ (b) $\angle x < \angle y$ (c) $\angle x = \angle y$ (d) None of these
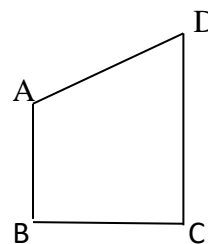
Solve the following problems:

1. In the given fig. T is a point on the side QR of $\triangle PQR$ and S is a point such that TR = TS.

   Prove that PQ + PR > QS.

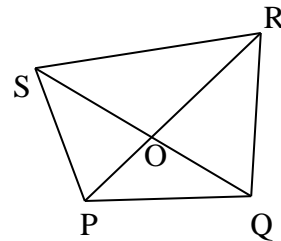2. AB and CD are respectively the smallest and longest sides

   of a quadrilateral ABCD. Show that $\angle A > \angle C$ and $\angle B > \angle D$.

3. PQRS is a quadrilateral such that diagonals PR and QS intersect at point O. Prove that

(a) $OP + OQ > PQ$

(b) $PQ + QR + RS + SP < 2 (PR + QS)$

4. In the fig. sides AB and AC of $\triangle$ ABC are extended to points P and Q respectively.

Also $\angle PBC < \angle QCB$. Show that $AC > AB$.

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