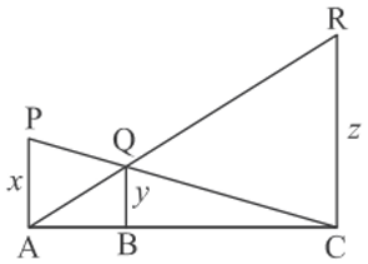
Chapter-Triangles
Question bank

Q1. In the given figure PA, QB and RC are each perpendicular to AC. If AP = x, BQ = y and CR = z, then prove that $\frac{1}{x} + \frac{1}{z} = \frac{1}{y}$



Q2.

ABC is an isosceles triangle in which $AB = AC =$ 10 cm $BC = 12$ cm $PQRS$ is a rectangle inside the isosceles triangle. Given $PQ = SR = y$, $PS = PR = 2x$. Prove that $x = 6 - \frac{3y}{4}$.

Q3.

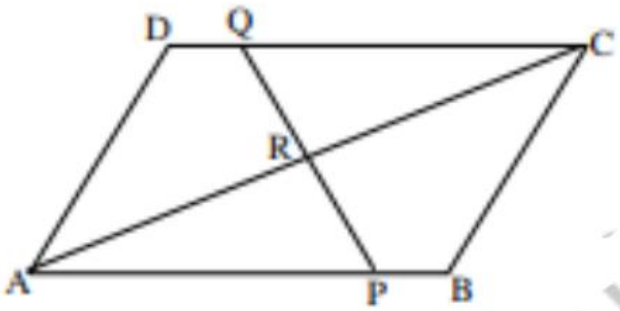
If A be the area of a right triangle and b be one of the sides containing the right angle, prove that the length of the altitude on the hypotenuse is $\frac{2Ab}{\sqrt{b^4 + 4A^2}}$.

Q4.

In a trapezium $ABCD, AB \| DC$ and $DC = 2AB$. $EF = AB$, where E and F lies on BC and AD respectively such that $\frac{BE}{EC} = \frac{4}{3}$ diagonal DB intersects EF at G. Prove that, $7EF = 11AB$.

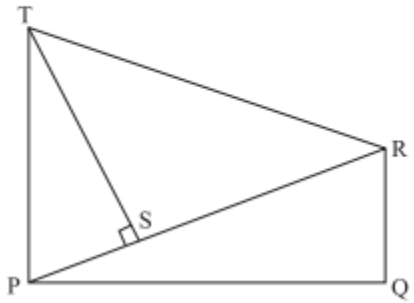
Q5.

ABCD is a parallelogram in the given figure, AB is divided at P and CD and Q so that AP:PB=3:2 and CQ:QD=4:1. If PQ meets AC at R, prove that $AR=\frac{3}{7}AC$.



Q6.

. In the given figure, RQ and TP are perpendicular to PQ, also $TS \perp PR$ prove that $ST \cdot RQ = PS \cdot PQ$.



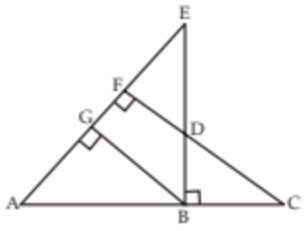
Q7.

. In given figure, $EB \perp AC$, $BG \perp AE$ and $CF \perp AE$.

Prove that:

(i) $\Delta ABG \sim \Delta DCB$

(ii) $\frac{BC}{BD} = \frac{BE}{BA}$

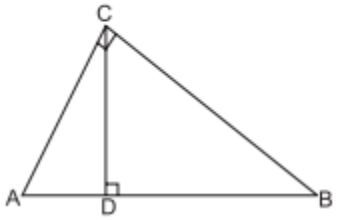


Q8.

Two right triangles ABC and DBC are drawn on the same hypotenuse BC and on the same side of BC. If AC and BD intersect at P, prove that $AP \times PC = BP \times DP$.

Q9.

. **In Fig. $\angle ACB = 90°$ and $CD \perp AB$, prove that $CD^2 = BD \times AD$.**



Q10.

.In given figure $\angle 1 = \angle 2$ and $\Delta NSQ - \Delta MTR$, then prove that $\Delta PTS - \Delta PRO$.