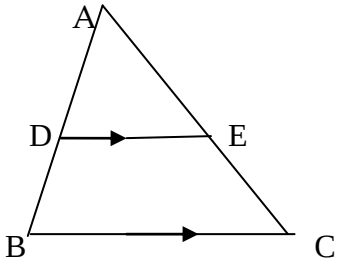
OUR OWN HIGH SCHOOL, AL WARQA'A, DUBAI

GRADE: X – TRIANGLES

ASSIGNMENT 1

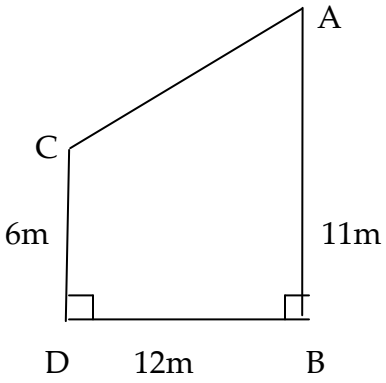
1. In Δ ABC, DE // BC so that AD = 24 cm, AE = 32 cm and EC = 48 cm. Find AB.



2. In a Δ ABC, D and E are points on the sides AB and AC respectively such that DE // BC. If AD = x, DB = $x - 2$, AE = $x + 2$ and EC = $x - 1$, then find the value of x.
3. Prove that a line parallel to the parallel sides of a trapezium, divides the non parallel sides in the same ratio.
4. The areas of two similar triangles ABC and LMN are 64 cm^2 and 81 cm^2 respectively. If MN = 6.3 cm, find BC.
5. Prove that in a ΔABC with AD ⊥ BC, $AB^2 + CD^2 = AC^2 + BD^2$.

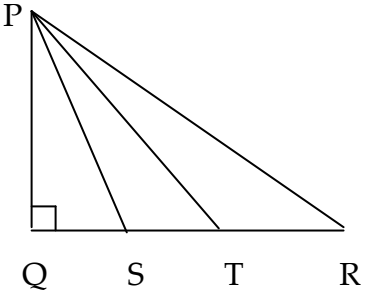
ASSIGNMENT 2

1. In the figure, find CA if CD ⊥ DB, and AD ⊥ DB



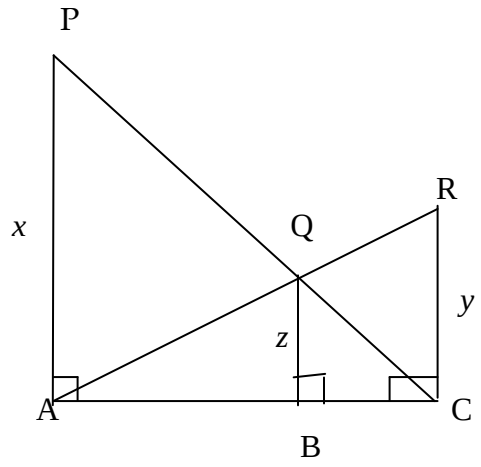
2. In the figure, Δ PQR is right angled at Q, and the points S and T trisect the side QR.

   Prove that: $8PT^2 = 3PR^2 + 5PS^2$



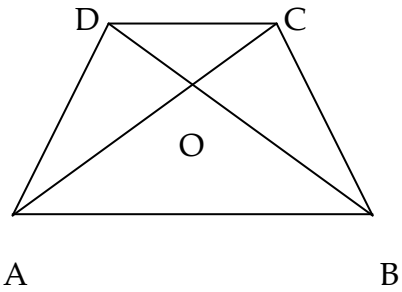
3. In a quadrilateral ABCD, $\angle B = 90^0$, if $AD^2 = AB^2 + BC^2 + CD^2$ prove that $\angle ACD = 90^0$.
4. In the figure, PA, QB and RC each is perpendicular to AC such that PA = x, RC = y, QB = z.

   Prove that: $\frac{1}{x} + \frac{1}{y} = \frac{1}{z}$



5. ABCD is a trapezium in which AB // DC and its diagonals intersect each other at the point O.

   Prove that: $\frac{AO}{OC} = \frac{BO}{OD}$

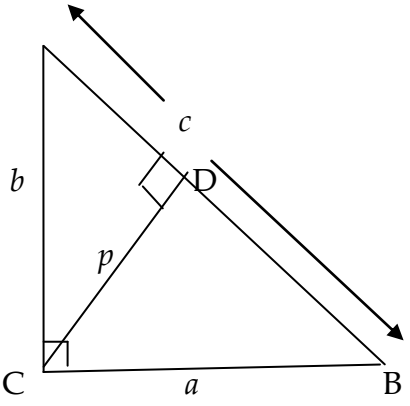


ASSIGNMENT 3

1. Δ ABC is a right angled triangle in which $\angle C = 90^0$ and CD $\perp$ AB. If BC = a, CA = b, AB = c and CD = p then prove that:

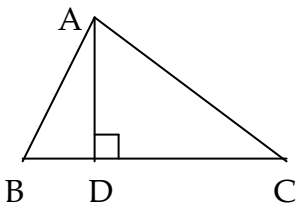
   (i) $cp = ab$

   (ii) $\frac{1}{p^2} = \frac{1}{a^2} + \frac{1}{b^2}$

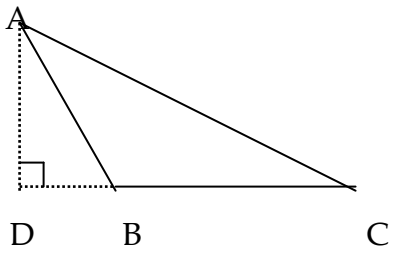


2. O is any point inside a rectangle ABCD. Probe that: $OB^2 + OD^2 = OA^2 + OC^2$.

3. In a Δ ABC, $\angle ABC < 90^0$ and AD $\perp$ BC.
   prove that: $AC^2 = AB^2 + BC^2 - 2\ BC\ .\ BD$



4. In a Δ ABC, $\angle ABC > 90^0$ and AD $\perp$ (CB produced)
   Prove that: $AC^2 = AB^2 + BC^2 + 2\ BC\ .\ BD$



****