Similar triangles Questions

Question 1.

In Δ ABC, ray AD bisects <A and intersects BC in D. If BC = a, AC = b and AB = c, prove that:

(i) BD = $\frac{ac}{b+c}$

(ii) DC = $\frac{ab}{b+c}$

Question 2.

Two poles of heights a and b metres are standing vertically on a level ground r metres apart. Prove that the height c of the point of intersection of the lines joining the top of each pole to the foot of the opposite pole is given by $\frac{ab}{a+b}, i.e., c = \frac{ab}{a+b}$.

Question 3.

D and E are points on the sides CA and CB respectively of Δ ABC right – angled at C. Prove that $AE^2 + BD^2 = AB^2 + DE^2$

Question 4.

In a quadrilateral Δ ABCD, <B = 90°, $AD^2 = AB^2 + BC^2 + CD^2$, prove that <ACD = 90°

Question 5.

ABC is a triangle in which AB = AC and D is a point on AC such that $BC^2 = AC \times CD. Prove\ that\ BD = BC$

Question 6.

P and Q are the mid points on the sides CA and CB respectively of triangle ABC right angled at C. Prove that

$4(AQ^2+BP^2) = 5\ AB^2$

Question 7.

True and False statement

a) All quadrilateral triangles are similar.

(b) All circles are similar.

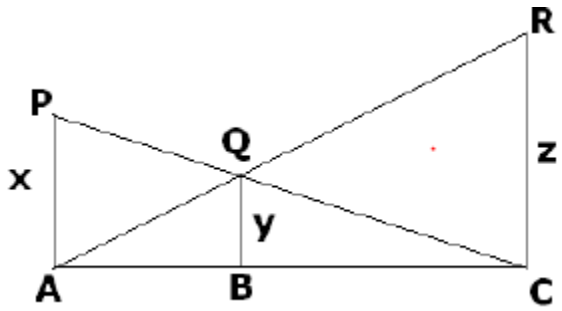
(c) All isosceles triangles are similar.

(d) All 30°. 60°. 90° triangles are similar.

Question 8.

In the below figure PA, QB and RC are each perpendicular to AC.

Prove that 1/x + 1/y = 1/z



Question 9.

ABC is a right triangle right angled at C. Let BC = a, CA = b AB = c and let p be the length of perpendicular from C on AB, prove that

(i) cp = ab

(ii) $1/p^2 = 1/a^2 + 1/b^2$

Question 10.

Diagonals of a trapezium ABCD with AB||DC intersect each other at the point O. If AB = 2DC, find ratio of the areas of AOB and COD