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**SERIES - 1**

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**Important Questions**  
for Chhattisgarh  
Board Exam ‘2021’

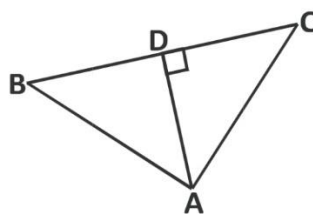
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**Class – 10<sup>th</sup>****Subject – Mathematics****“Similarity in Geometrical Shapes”****“4” Marks Questions**

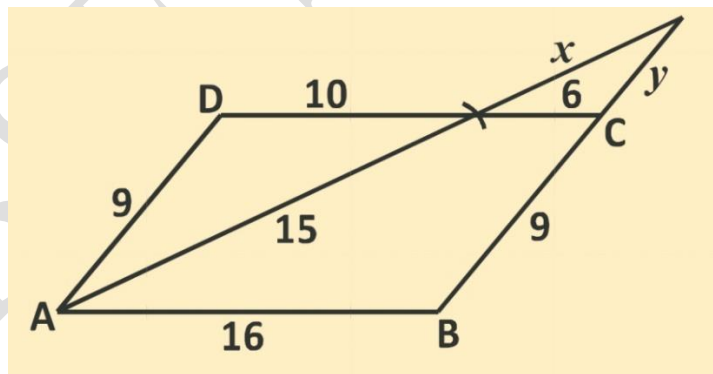
1. A girl of height 90 cm is walking away from the base of the lamp post at a speed of 1.2m/s. If the lamp bulb is 3.6m above the ground. Find length of her shadow after 4 seconds.

2. In figure  $AD \perp BC$ .

Prove that  $AB^2 + CD^2 = BD^2 + AC^2$



3. ABCD is a parallelogram. Find the values of x and y.



4. If the areas of two similar triangles are equal to each other, Then prove that the triangles are congruent.

5.  $\triangle ABC$  is an isosceles triangle in which  $\angle C = 90^\circ$ .

prove that  $AB^2 = 2AC$

6. Triangle ABC is right angled at C. Point D and E are located on sides CA and CB respectively. Prove that  $AE^2 + BD^2 = AB^2 + DE^2$ .

**“5” Marks Question**

1. In a right triangle PQR, P is the right angle and M is the point on QR such that  $PM \perp QR$ . Show that  $pm^2 = QM.MR$ .
2. In a triangle ABC,  $\angle ABC = 90^\circ$  and  $CD \perp AB$ . Prove that  $\frac{BC^2}{AC^2} = \frac{BD}{AD}$ .
3. In a right angle triangle, the square of hypotenuse is equal to the sum of the squares of other two sides. Prove.
4. The ratio of the area of 2 similar triangles is equal to ratio of their corresponding sides. Prove.

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