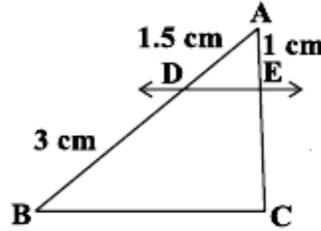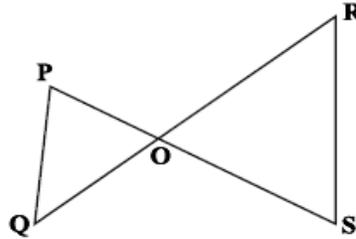**TRIANGLES**

1) State Pythagoras Theorem

2) In the given figure, DE ‖ BC. Find EC.

3) A ladder 12m long rests against a wall. If it reaches the wall at a height of $6\sqrt{3}$, then what is the distance between the wall and the foot of the ladder?

4) ABC is an isosceles triangle right angled at C. Prove that $AB^2 = 2AC^2$.

5) In Fig. if, $\triangle POQ \sim \triangle SOR$ prove that PQ ‖ RS

6) State and Prove converse of Pythagoras Theorem

7) Sides AB and BC and the median AD of ∆ABC are respectively proportional to the sides PQ and QR and the median PM of ∆PQR. Show that ∆ABC ∼∆PQR.
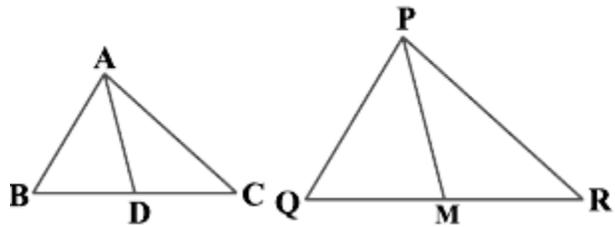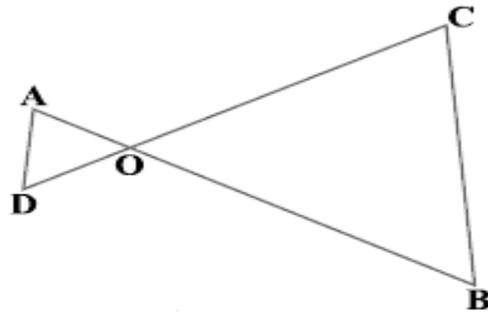

8) In a trapezium ABCD, AB ‖ DC and O is the point of intersection of the diagonals AC and BD. Prove that $\dfrac{AO}{BO} = \dfrac{CO}{DO}$.

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9) Find the value of x for which DE ∥ AB
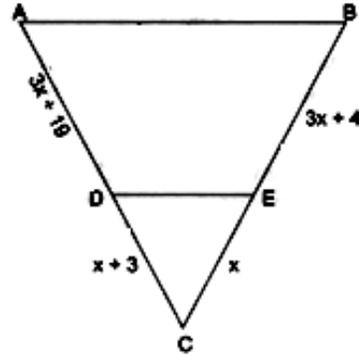
10) In the given Fig. OA.OB = OC.OD.
    Show that $\angle A = \angle C$ and $\angle B = \angle D$

11) A vertical pole of height 6 m casts a shadow of 4 m long on the ground and at the same time a tower casts a shadow of 28 m long. Find the height of the tower.

12) In an equilateral triangle, prove that three times the square of one side is equal to four times the square of one of its altitudes.

13) Prove that the ratio of the areas of two similar triangles is equal to the ratio of the squares of their corresponding sides.

14) In the figure, D and E trisect BC and ABC is a right triangle with $\angle B = 90°$.
   Prove that $8AE^2 = 3AC^2 + 5AD^2$.
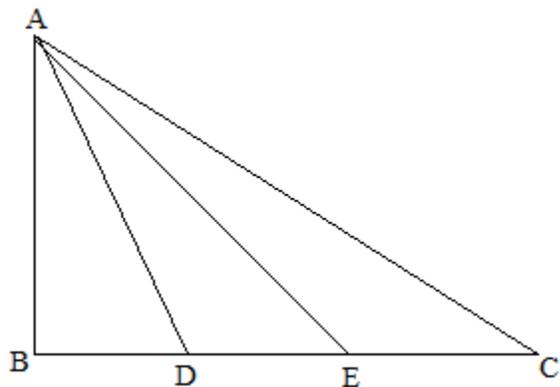
15) The perpendicular from A on side BC of aΔ ABC intersects BC at D such that DB = 3 CD(see Fig.). Prove that 2 AB^2 = 2 AC^2 + BC^2.
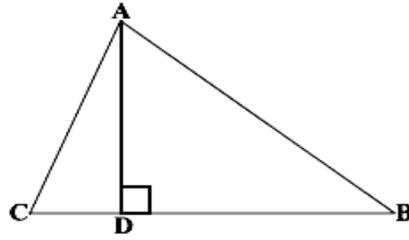

16) State and prove Basic Proportionality Theorem

17) State and prove Pythagoras Theorem.

18) ABC is an isosceles triangle right angled at B. Similar triangles ACD and ABE are constructed on sides AC and AB. Find the ratio between the areas of Δ ABE and Δ ACD.
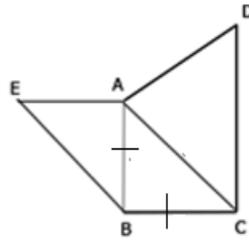
19) In the figure, the line segment XY is parallel to side AC of Δ ABC and itdivides the triangle into two parts of equal areas. Find the ratio $\dfrac{AX}{AB}$
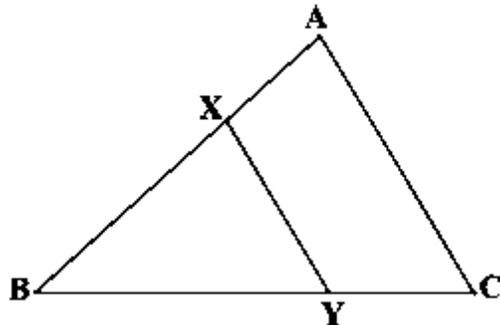
20) BL and CM are medians of a triangle ABC right angled at A. Prove that 4 (BL^2 + CM^2) = 5 BC^2.

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