Year 10 Measurement Worksheet

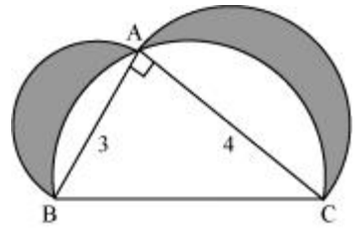
1. A cylinder and a cone are of same base radius and of same height. Find the ratio of the volume of cylinder to that of the cone.

2. From a solid cylinder whose height is 8 cm and radius 6 cm, a conical cavity of height 8 cm and of base radius 6 cm, is hollowed out. Find the volume of the remaining solid correct to two places of decimals. Also find the total surface area of the remaining solid. (take π = 3.1416)

3. A milk container is made of metal sheet in the shape of frustum of a cone whose volume is $10459\frac{3}{7}\text{cm}^3$. The radii of its lower and upper circular ends are 8 cm and 20 cm respectively. Find the cost of metal sheet used in making the container at the rate of Rs. 1.40 per square centimeter. $\left[\text{Use}\pi = \frac{22}{7}\right]$

4. The sides of a triangular plot are in the ratio of 3 : 5 : 7 and its perimeter is 300 m. Find its area.

5. In figure, ABC is a right-angled triangle, right-angled at A. Semi-circles are drawn on AB, AC, and BC as diameters. Find the area of shaded region.



6. The slant height of a frustum of a cone is 4 cm and the perimeters (circumferences) of its circular ends are 18 cm and 6 cm. Find the curved surface area of the frustum.

Curved surface area of the frustum of cone $= \pi(r_1 + r_2)l$

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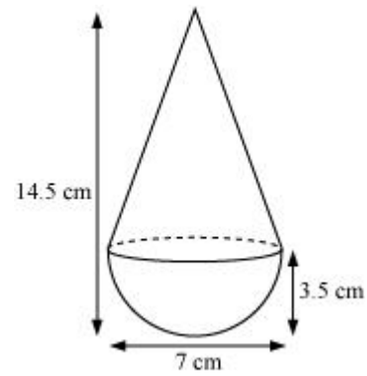
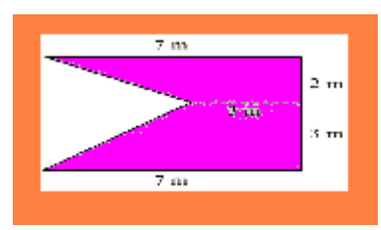
7. A toy in the form of a cone is mounted on a hemisphere with same radius. The diameter of the base of the conical portion is 7 cm and the total height of the toy is 14.5 cm. Find the volume of the toy. $\left(\text{Use } \pi = \frac{22}{7}\right)$



8. A hemispherical bowl of internal diameter 36 cm is full of some liquid. This liquid is to be filled in cylindrical bottles of radius 3 cm and height 6 cm. Find the number of bottles needed to empty the bowl.

9. A cone of height 15 cm and diameter 7 cm is mounted on a hemisphere of same diameter. Determine the volume of the solid thus formed.

10. Find the area of the shaded region in the following figure



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