4) Surface Area of Solids
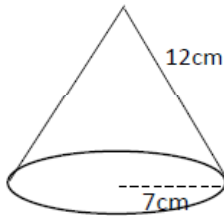
Part I

1. In a square based right pyramid, the length of a side 12cm and the perpendicular height of a triangular face is 10m. Find the total surface area of the pyramid.

2. The base length of a square based right pyramid is x cm and the perpendicular height of a triangular face is h cm. Find the total surface area of the pyramid in terms of x and y.
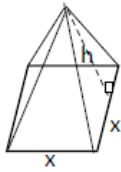

3. Find the total surface area of the given cone.

12cm

7cm

4. The base length of a square based right pyramid is 12cm and the perpendicular height of a triangular face is 10cm. Find the perpendicular height of the pyramid.


10cm

h

12cm

12cm
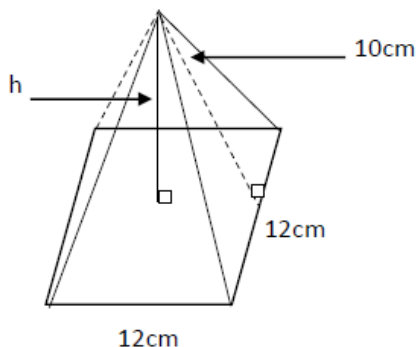
5. Shown in the figure is a solid right circular cone. Its radius r cm and slant height l cm. Find the total surface area of the cone in terms of l and r.
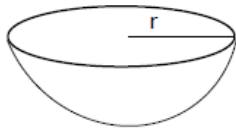

l

r
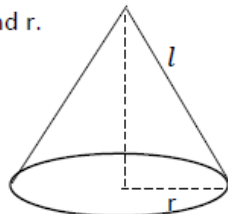
6. The surface area of a square based right pyramid is 528cm². If the area of the square base is 144cm², find the area of a triangular face.
7. Shown in the figure, is a thin glass container is the shape of a cone filled with water. Find the area of the region on the glass surface that is in contact with water.
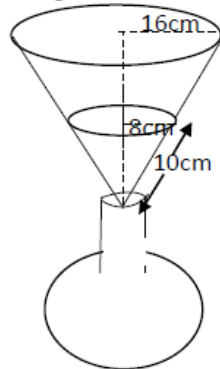
8. Find the radius of a sphere of surface area 2464cm².
9. Shown in the figure is a solid hemisphere. Find the total surface area of it in terms of r.

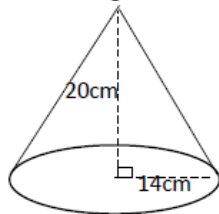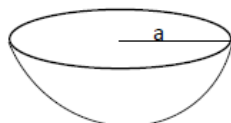10. Find the surface area of a solid hemisphere of radius 0.5m.

Part II

1) The surface area of a square based right pyramid is 896cm². If the length of a side of the base is 16cm,

   i.   the area of the square base
   ii.   the area of a triangular face
   iii. the perpendicular height of a triangular face
   iv.   the perpendicular height of the pyramid. (Represent the answer as a surd)

2) Shown in the figure is a cone.

   i.   Find the slant height of the cone.
   ii.   Find the area of the base.
   iii. Find the total surface area of the cone.

3) a) Shown in the figure, is a solid hemisphere of radius a cm.

   i.   Show that the total surface area of the hemisphere is $3\pi a^2$.
   ii.   Find the total surface area of a solid hemisphere of radius 7 cm.

   b) i. Find the radius of a sphere of surface area 154cm².
      ii. Find the external surface area of a solid cone of radius 0.75m.