Al Moattassem International School - Jubail

Revision 3 - chapter 12 - Volume & Surface Area

Part 1

Fill in the Blanks:

1.Volume of Prism = _____

2. Volume of Pyramid = ____ x Volume of corresponding prism

3. Total Surface Area of Pyramid = _____

4. Volume of Sphere = 2/3 x _____

Part 2

Solve the Following:

1. A Pyramid has a square base of length 12 m. Given that the slant height of the Pyramid is 15m, draw its net and hence find its total surface area.

2. OABC is a triangular pyramid with a base area of 15 cm^2 and a height of 4 cm. Find the volume of the triangular pyramid.

3.A Cone has a circular base of radius 8 cm and a height of 17 cm. Find the volume of the cone.

4. A Cone has a circular base of radius 9 cm and a slant height of 5 cm. Find the total Surface Area of the Cone.

5. Find the volume of each of the Sphere with the radius of 8 cm.

6. Find the surface area of each of the Sphere with the radius of 12 cm.

7. Find the Total Surface Area of a hemisphere of radius 7cm

(Take ∏ = 3.142)

8. A Solid consists of a cone and a hemisphere which share a common base. The Solid has a height of 50 cm and the hemisphere has a diameter of 30cm.

Find

i) The volume
ii) Total Surface Area of the Solid.

Shape	Surface Area Formula	Volume Formula
Cube	$SA = 6s^2$ where s = length of the side	$V = s^3$ where s = length of the side
Cuboid	$SA = 2(lw + lh + wh)$ where l = length, w = width, h = height	$V = lwh$ where l = length, w = width, h = height
Prism	$SA = 2B + ph$ where B = area of base, p = perimeter of base, h = height	$V = Bh$ where B = area of base, h = height
Cylinder	$SA = 2\pi r^2 + 2\pi rh$ where r = radius, h = height	$V = \pi r^2 h$ where r = radius, h = height
Hollow Cylinder	$SA = 2\pi rh + 2\pi Rh + 2\left(\pi R^2 - \pi r^2\right)$ where R = radius of the outer surface, r = radius of the inner surface	$V = \pi R^2 h - \pi r^2 h$ where R = radius of the outer surface, r = radius of the inner surface
Cone	$SA = \pi r^2 + \pi rs$ where r = radius, s = slant height	$V = \frac{1}{3}\pi r^2 h$ where r = radius,h = height
Pyramid	SA = area of base + area of each of the lateral faces Regular pyramid = area of base + $\frac{1}{2}ps$ where p = perimeter of the base, s = slant height Square pyramid = $b^2 + 2bs$ where b = length of the base, s = slant height	$V = \frac{1}{3}Bh$ where B = area of the base, h = height
Sphere	$SA = 4\pi r^2$ where r = radius	$V = \frac{4}{3}\pi r^3$ where r = radius
Hemisphere	$SA = 3\pi r^2$ where r = radius	$V = \frac{2}{3}\pi r^3$ where r = radius