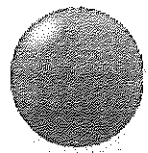


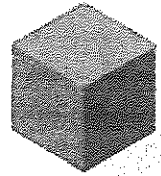
Surface Area of 3D Shapes

3D Shapes composed of regular polygons are called prisms or geometric solids. The 'unfolded' 2D template of the prism is called a net.

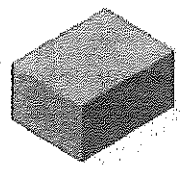
Sketch the net for the following shapes:



Sphere

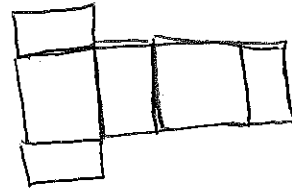


Cube

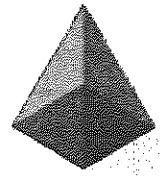


Rectangular Prism

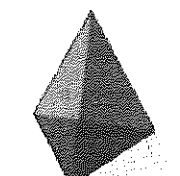
1. Rectangular Prism



Cone

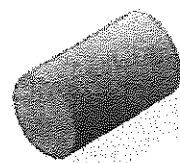
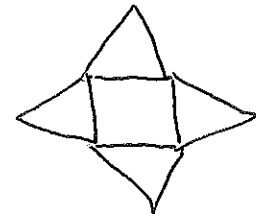


Square-based Pyramid

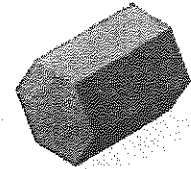


Triangular-based Pyramid

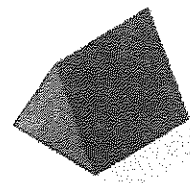
2. Square Based Pyramid



Cylinder

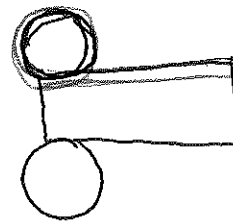


Hexagonal Prism



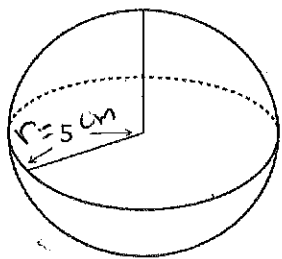
Triangular Prism

3. Cylinder



The data booklet contains formulas to calculate the surface area of common geometric solids

Find the area of the following shapes:



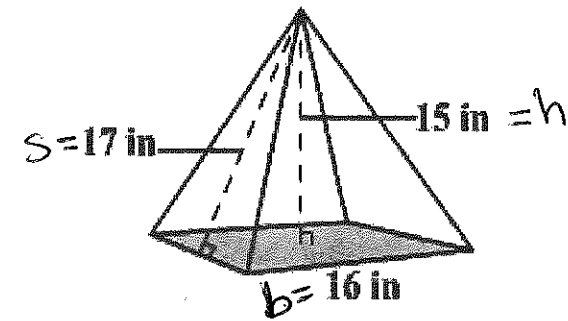
$$SA = 4\pi r^2$$

$$\text{or } SA = \pi d^2$$

$$SA = 4\pi 5^2$$

$$= 4\pi 25$$

$$= 314.159 \text{ cm}^2$$



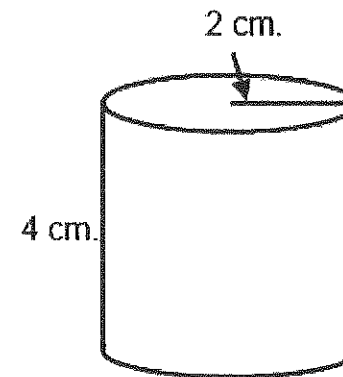
4 triangles $4(\frac{1}{2}bs)$

$$SA = 2bs + b^2$$

$$= 2 \cdot 16 \cdot 17 + 16^2$$

$$= 544 + 256$$

$$= 800 \text{ in}^2$$



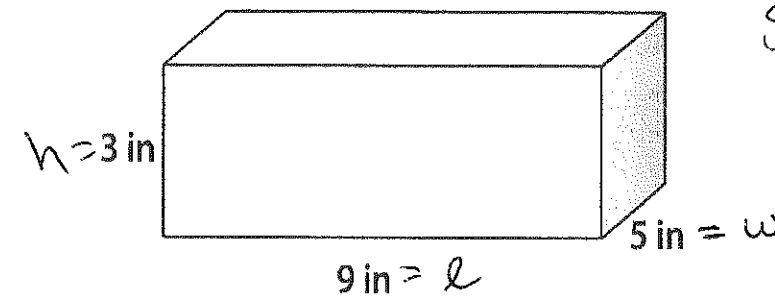
$$SA = 2\pi r^2 + 2\pi r h$$

$$= 2\pi \cdot 2^2 + 2\pi \cdot 2 \cdot 4$$

$$= 8\pi + 16\pi$$

$$= 24\pi$$

$$= 75.398 \text{ cm}^2$$



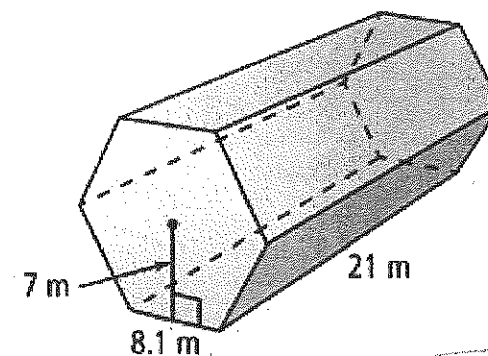
$$SA = 2(lw + lh + hw)$$

$$= 2(9 \cdot 5 + 9 \cdot 3 + 5 \cdot 3)$$

$$= 2(45 + 27 + 15)$$

$$= 2(87)$$

$$= 174 \text{ in}^2$$



$$A_{\Delta} = \frac{bh}{2} = \frac{8.1 \cdot 7}{2} = 28.35$$

$$28.35 \times 2 = 56.7 \text{ m}^2$$



$$A_{\square} = lw = 21 \cdot 8.1$$

$$= 170.1$$

$$170.1 \times 6 = 1020.6 \text{ m}^2$$

$$= 1360.8 \text{ m}^2$$