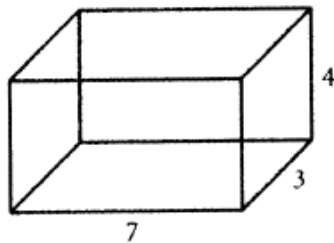


SOLIDS

93. SURFACE AREA OF A RECTANGULAR SOLID

The surface of a rectangular solid consists of 3 pairs of identical faces. To find the surface area, find the area of each face and add them up. If the length is l , the width is w , and the height is h , the formula is:

$$\text{Surface Area} = 2lw + 2wb + 2lh$$

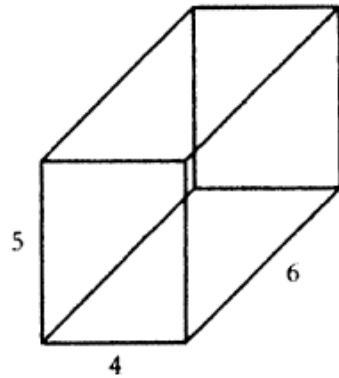


The surface area of the box above is:

$$\begin{aligned} 2 \times 7 \times 3 + 2 \times 3 \times 4 + 2 \times 7 \times 4 = \\ 42 + 24 + 56 = 122 \end{aligned}$$

94. VOLUME OF A RECTANGULAR SOLID

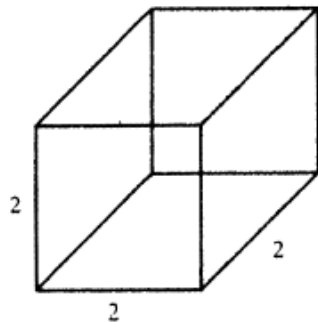
Volume of a Rectangular Solid = lwh



The volume of a 4-by-5-by-6 box is
 $4 \times 5 \times 6 = 120$.

A cube is a rectangular solid with length, width, and height all equal. The volume formula if e is the length of an edge of the cube is:

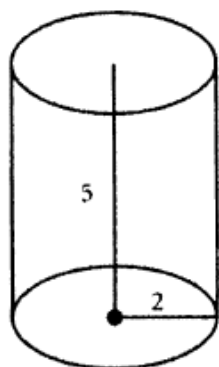
Volume of a Cube = e^3



The volume of the cube above is $2^3 = 8$.

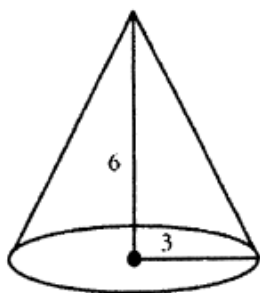
95. VOLUME OF OTHER SOLIDS

Volume of a Cylinder = $\pi r^2 h$



The volume of a cylinder where $r = 2$, and $h = 5$ is $\pi(2^2)(5) = 20\pi$.

Volume of a Cone = $\frac{1}{3}\pi r^2 h$



The volume of a cone where $r = 3$, and $h = 6$ is:

$$\text{Volume} = \frac{1}{3}\pi(3^2)(6) = 18\pi$$

Volume of a Sphere = $\frac{4}{3}\pi r^3$

If the radius of a sphere is 3, then:

$$\text{Volume} = \frac{4}{3}\pi(3^3) = 36\pi$$