

# Useful Formulas

Where:

A = Area; A<sub>1</sub> = Surface area of solids;

V = Volume; C = Circumference

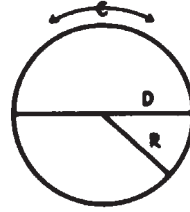
## Circle

$$A = 3.142 \times R \times R$$

$$C = 3.142 \times D$$

$$R = \frac{D}{2}$$

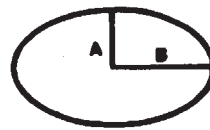
$$D = 2 \times R$$



## Ellipse

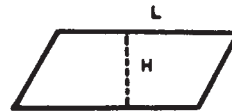
$$A = 3.142 \times A \times B$$

$$C = 6.283 \times \frac{\sqrt{A^2 + B^2}}{2}$$



## Parallelogram

$$A = H \times L$$



## Rectangle

$$A = W \times L$$



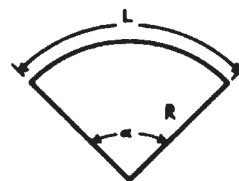
## Sector of circle

$$A = \frac{3.142 \times R \times R \times a}{360}$$

$$L = .01745 \times R \times a$$

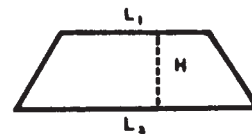
$$a = \frac{L}{.01745 \times R}$$

$$R = \frac{L}{.01745 \times a}$$



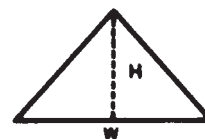
## Trapezoid

$$A = H \times \frac{L_1 + L_2}{2}$$



## Triangle

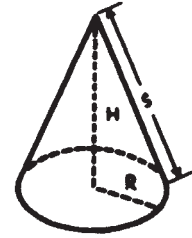
$$A = \frac{W \times H}{2}$$



**Cone**

$$A_1 = 3.142 \times R \times S + 3.142 \times R \times R$$

$$V = 1.047 \times R \times R \times H$$

**Cylinder**

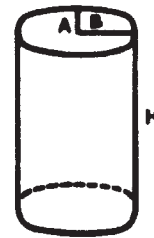
$$A_1 = (6.283 \times R \times R) + (6.283 \times R \times H)$$

$$V = 3.142 \times R \times R \times H$$

**Elliptical Tanks**

$$V = 3.142 \times A \times B \times H$$

$$A_1 = 6.283 \times \frac{\sqrt{A^2 + B^2}}{2} \times H + 6.283 \times A \times B$$

**Rectangular solid**

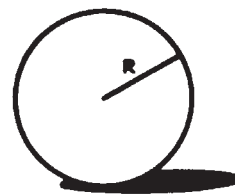
$$A_1 = 2[W \times L + L \times H + H \times W]$$

$$V = W \times L \times H$$

**Sphere**

$$A_1 = 12.56 \times R \times R$$

$$V = 4.188 \times R \times R \times R$$



For above containers:

Capacity in gallons =  $\frac{V}{231}$  when V is in cubic inches.

Capacity in gallons =  $7.48 \times V$  when V is in cubic feet.