

USEFUL FORMULAS

Where:

A = Area; A_s = Surface area of solids;

V = Volume; C = Circumference

Rectangle

$$A = W \times L$$



Parallelogram

$$A = H \times L$$



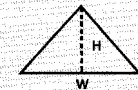
Trapezoid

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



Triangle

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



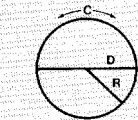
Circle

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

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

$$C = 3.142 \times D$$

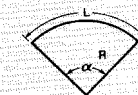
$$D = 2 \times R$$



Sector of circle

$$L = .01745 \times R \times \alpha \quad \alpha = \frac{L}{.01745 \times R}$$

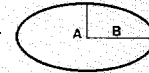
$$A = \frac{3.142 \times R \times R \times \alpha}{360} \quad R = \frac{L}{.01745 \times \alpha}$$



Ellipse

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

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



Rectangular solid

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

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



Cone

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

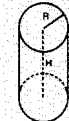
$$V = 1.047 \times R \times R \times H$$



Cylinder

$$A_s = 6.283 \times R \times H + 6.283 \times R \times R$$

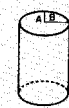
$$V = 3.142 \times R \times R \times H$$



Elliptical Tanks

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

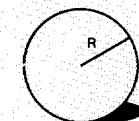
$$A_s = 6.283 \times \frac{\sqrt{A^2 + B^2}}{2} \times H + 6.283 \times A \times B$$



Sphere

$$A_s = 12.56 \times R \times R$$

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



For above containers:

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

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

To convert Celsius to Fahrenheit - $^{\circ}\text{C} \times 1.8 + 32$

To convert Fahrenheit to Celsius - $(^{\circ}\text{F} - 32) \times 5/9$

To convert n/mm² to PSI - Multiply by 145.04

To convert kg/mm² to PSI - Multiply by 1.422334