Math 10-3 Formula Sheet

Linear Measurement

1 ft = 12 in
1 yd = 3 ft
1 mi = 1760 yd
1 acre = 4840 sq yd

1 m = 1000 mm
1 m = 100 cm
1 km = 1000 m

In a circle

diameter = radius $\times$ 2
circumference = $\pi \times$ diameter
circumference = $\pi \times$ radius $\times 2$

Imperial to SI

1 in $\doteq$ 2.54 cm
1 ft $\doteq$ 0.31 m
1 yd $\doteq$ 0.91 m
1 mi $\doteq$ 1.61 km
1 acre $\doteq$ 0.4047 ha

SI to Imperial

1 mm $\doteq$ 0.039 in
1 cm $\doteq$ 0.39 in
1 m $\doteq$ 1.09 yd
1 km $\doteq$ 0.62 mi
1 ha $\doteq$ 2.4711 acres

Area

Triangle: $A = \frac{1}{2}(b \times h)$

Circle: $A = \pi r^2$

Trapezoid: $A = \frac{1}{2}$ (sum of parallel lengths) $\times$ height

Parallelogram: $A = \text{base} \times \text{height}$

Imperial to SI

1 sq in = 6.4516 cm^2
1 sq ft = 0.0929 m^2
1 sq yd = 0.8361 m^2
1 sq mi = 2.5900 km^2

SI to Imperial

1 cm^2 = 0.1550 sq in
1 m^2 = 10.7639 sq ft
1 km^2 = 0.3861 sq mi

Mass

SI Mass

1 t = 1000 kg
1 kg = 1000 g
1g = 0.001 mg

Imperial (US)

1 lb = 16 oz
1T = 2000 lb

Imperial (US) to SI Mass

1 oz = 28.35 g
1 lb = 0.45 kg
1 T = 0.91 t

SI to Imperial (US) Mass

1 g = 0.04 oz
1 kg = 2.21 lb
1 t = 1.10 T

Surface Area

Closed cone: $SA = \pi r^2 + \pi rs$

Prefixes

penta means 5
hexa means 6
hepta means 7
octa means 8
nona means 9
deca means 10

Volume

SI Volume
1 hm^3 = 1 000 000 m^3
1 dam^3 = 1000 m^3
1m^3 = 1 000 000 cm^3
1 cm^3 = 0.000 001 m^3
1 dm^3 = 0.001 m^3
1 km^3 = 1 000 000 000 m^3
1 cm^3 = 1 mL

Imperial Volume
1 cu ft = 1728 cu in
1 cu yd = 27 cu ft

Imperial to SI Volume
1 cu in = 16.39 cm^3
1 cu ft = 28.32 dm^3
1 cu ft = 0.02832 m^3
1 cu yd = 0.76 m^3
1 cu mi = 4.17 km^3

SI to Imperial Volume
1 cm^3 = 0.06 cu in
1 m^3 = 1.31 cu yd
1 km^3 = 0.24 cu mi

Temperature

$$F = \frac{9}{5}C + 32$$

$$C = \frac{5}{9}(F - 32)$$

Capacity

SI Capacity
1 kL = 1000 L
1 hL = 100L
1 daL = 10 L
1 dL =0.1 L
1 cL = 0.01 L
1 mL = 0.001 L

Imperial Capacity (US)
1 fl oz = 2 T (tablespoons)
1 c = 8 fl oz
1 pt = 2 c
1 qt = 2 pt
1 gal = 4 qt

Imperial to SI Capacity
1 fl oz = 29.57 mL
1 pt = 0.47 L
1 qt = 0.95 L
1 gal = 3.79 L

SI to Imperial Capacity
1 mL = 0.03 fl oz
1 L = 2.11 pt
1 L = 1.06 qt
1 L = 0.26 gal

Right Triangles

Pythagorean Theorem

$$a^2 + b^2 = c^2$$

Ratios of Sides

$$\sin\angle A = \frac{opposite}{hypotenuse}$$

$$\cos\angle A = \frac{adjacent}{hypotenuse}$$

$$\tan\angle A = \frac{opposite}{adjacent}$$