**FORMULAS FROM GEOMETRY**

**Pythagoream Theorem**

If a triangle has sides a, b, and c (c is the hypotenuse), then c2 = a2 + b2

c

b

a

**Triangle with Base and Height Given**

h

The area of a triangle whose base is b and altitude is h (the perpendicular distance to the base) is A = ½ b x h

b

**Triangle with Base and Height Unknown**

The area of a triangle with angles A, B, and C and sides opposite a, b, and c, respectively:

Area = ½ ab x sinC

A

B

C

a

c

b

**Area of a Parallelogram**

The area of a parallelogram with base b and altitude h is Area = bh

b

h

**Area of a Trapezoid**

The area of a trapezoid whose parallel sides are a and b and altitude is h is

Area = ½(a + b)h

a

b

h

**Circle Formulae**

For a circle whose radius is r and diameter is d (d = 2r):

Circumference : C = 2r = d

Area: A = r2

d

If s is the length of an arc subtended by a central angle of  radians, then

 s = r

s



**3 Dimensional Solids**

**Sphere**

A Sphere with radius r has:

Surface Area = 4r2

Volume = 4/3 r3

r

**Right Circular Cylinder**

A right circular cylinder where r is the radius of the base and h is the altitude has:

Surface area = 2rh

Volume = r2h

h

r

**Right Circular Cone**

A right circular cone where r is the radius of the base and h is the altitude has:

Surface area = 

Volume = 1/3 r2h

h

r