

Calculating Area & Volume

Circle

Area = Square of Diameter x .7854
or Square of Radius x 3.1416

Circumference = Diameter x 3.1416

Diameter = Circumference x .3183

Doubling diameter increases area four times;
tripling diameter increases area nine times, etc.

Square

Area = Square of Side

Diagonal = Side x 1.4142

Side = Diagonal x .7071

Square Inscribed in Circle

Side of Square = Diameter of Circle
x .7071

Circumference of Circle x .2251

Diameter of Circle = Side of Square
x 1.4142

Circumference of Circle = Side of
Square x 4.4429

Square and Circle With Equal Area

Side of Square = Diameter of Circle
x .8862

Diameter of Circle = Side of Square
x 1.128

Circumference of Circle = Side of
Square x 3.545

Rectangle

Area = Length x Width

Diagonal = Square root of sum of
squares of Width and Length

Triangle

Area = Base x ½ of Perpendicular
Height

Cube

Area of Surface = Square of Side x 6

Volume = Cube of Side

Diagonal = Side x 1.732

Pyramid

Lateral Surface Area (not including
base) = Perimeter of Base x ½
Slant Height

Volume = Area of Base x ⅓
Perpendicular Height

Hexagon (equal sides and angles)

Area = Square of Distance across Flats
x .866

or square of Side x 2.598

Side = ½ of Diagonal

or Distance across Flats x .577

Diagonal = Distance across Flats
x 1.155

or Side x 2

Octagon (equal sides and angles)

Area = Square of Distance across Flats
x .828

or Square of Side x 4.828

Side = Diagonal x .383

or Distance across Flats x .414

Diagonal = Distance across Flats
x 1.082

or Side x 2.613

Sphere

Area of Surface = Square of Diameter
x 3.1416

Volume = Cube of Diameter x .5236

Cylinder

Area of Curved Surface = Diameter x
Length x 3.1416

Volume = Square of Diameter x Length
x .7854

Cone

Area of Curved Surface = Diameter of
Base x Slant Height x 1.5708

Volume = Diameter of Base Squared x
Perpendicular Height x .2618
or Area of Base x ⅓
Perpendicular Height