

# FORMULAS

## GEOMETRIC FORMULAS

### CIRCLE

Area = Square of Diameter  $\times$  .7854 or Square of Radius  $\times$  3.1416

Circumference = Diameter  $\times$  3.1416

Diameter = Circumference  $\times$  .3183 Doubling diameter increases area four times; tripling diameter increases area nine times, etc.

### SQUARE

Area = Square of Side

Diagonal = Side  $\times$  1.4142

Side = Diagonal  $\times$  .7071

### SQUARE INSCRIBED IN CIRCLE

Side of Square = Diameter of Circle  $\times$  .7071 or Circumference of Circle  $\times$  .2251

Diameter of Circle = Side of Square  $\times$  1.4142

Circumference of Circle = Side of Square  $\times$  4.4429

### SQUARE AND CIRCLE WITH EQUAL AREA

Side of Square = Diameter of Circle  $\times$  .8662

Diameter of Circle = Side of Square  $\times$  1.128

Circumference of Circle = Side of Square  $\times$  3.545

### RECTANGLE

Area = Length  $\times$  Width

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

### TRIANGLE

Area = Base  $\times$  1/2 of Perpendicular Height

### HEXAGON (Equal sides and angles)

Area = Square of Distance across Flats  $\times$  .866 or Square of Side  $\times$  2.598

Side = 1/2 of Diagonal or Distance across Flats  $\times$  .577 Diagonal = Distance across Flats  $\times$  1.155 or Side  $\times$  2

### OCTAGON (Equal sides and angles)

Area = Square of Distance across Flats  $\times$  .828 or Square of Side  $\times$  4.828

Side = Diagonal  $\times$  .383 or Distance across Flats  $\times$  .414

Diagonal = Distance across Flats  $\times$  1.082 or Side  $\times$  2.613

### SPHERE

Area of Surface = Square of Diameter  $\times$  3.1416

Volume = Cube of Diameter  $\times$  .5236

### CUBE

Area of Surface = Square of Side  $\times$  6

Volume = Cube of Side

Diagonal = Side  $\times$  1.732

### CYLINDER

Area of Curved Surface = Diameter  $\times$  Length 3.1416

Volume = Square of Diameter  $\times$  Length  $\times$  .7854

### CONE

Area of Curved Surface = Diameter of Base  $\times$  Slant Height  $\times$  1.5708

Volume = Diameter of Base Squared  $\times$  Perpendicular Height  $\times$  .2618 or Area of Base  $\times$  Vs Perpendicular Height

### PYRAMID

Lateral Surface Area (not incl. base) = Perimeter of Base  $\times$  1/2 Slant Height

Volume = Area of Base  $\times$  1/3 Perpendicular Height