

Expect the Unexpected With
Math®

SETTING THE STAGE WITH GEOMETRY

Abbreviations

A = area	P = perimeter
b = base	π = pi = 3.14
BA = base area	r = radius
C = circumference	SA = surface area
d = diameter	slant h = slant height
h = height	V = volume
l = length	w = width

2D Shape Formulas

Perimeter: the total distance around the outside of a polygon

RECTANGLE: $P = 2 \cdot (l + w)$

CIRCLE: $C = \pi \cdot d$

TRIANGLE: $P = \text{side } a + \text{side } b + \text{side } c$

Area: the measure of a bounded region of a two-dimensional shape expressed in square units

RECTANGLE: $A = l \cdot w$

CIRCLE: $A = \pi \cdot r^2$

TRIANGLE: $A = 1/2 \cdot (b \cdot h)$

3D Shape Formulas

Surface Area: the sum of all the areas of all surfaces of a three-dimensional object, measured in square units

RECTANGULAR PRISM: $SA = 2 \cdot (l \cdot w + l \cdot h + w \cdot h)$

CYLINDER: $SA = (2 \cdot \pi \cdot r^2) + (\pi \cdot d \cdot h)$

SQUARE PYRAMID: $SA = (BA) + 1/2 \cdot P \cdot \text{slant } h$

Volume: the amount of space inside a three-dimensional shape, measured in cubic units

RECTANGULAR PRISM: $V = l \cdot w \cdot h$

CYLINDER: $V = \pi \cdot r^2 \cdot h$

SQUARE PYRAMID: $V = 1/3 \cdot BA \cdot h$

