

Geometry Formulas

DEFINITIONS

The **perimeter** is the sum of the lengths of all the sides of a figure.

The **area** is the amount of space enclosed by a two-dimensional figure measured in units squared.

The **surface area** of a solid is the sum of the areas of the surfaces of a three-dimensional figure.

The **volume** is the amount of space occupied by a three-dimensional figure measured in units cubed.

The **radius** r of a circle is the line segment that extends from the center of the circle to any point on the circle.

The **diameter** of a circle is any line segment that extends from one point on the circle through the center to a second point on the circle. The diameter is two times the length of the radius, $d = 2r$.

In circles, we use the term **circumference** to mean the perimeter.

Plane Figures

Square



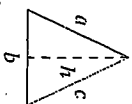
Area: $A = s^2$
Perimeter: $P = 4s$

Rectangle



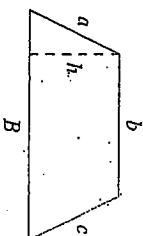
Area: $A = lw$
Perimeter: $P = 2l + 2w$

Triangle



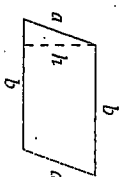
Area: $A = \frac{1}{2}bh$
Perimeter: $P = a + b + c$

Trapezoid



Area: $A = \frac{1}{2}h(B + b)$
Perimeter: $P = a + b + c + B$

Parallelogram



Area: $A = bh$
Perimeter: $P = 2a + 2b$

Circle

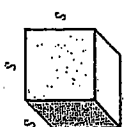


Area: $A = \pi r^2$
Circumference: $C = 2\pi r = \pi d$

Formulas

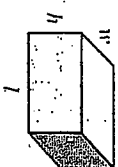
Solids

Cube



Volume: $V = s^3$
Surface Area: $S = 6s^2$

Rectangular Solid



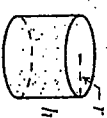
Volume: $V = lwh$
Surface Area: $S = 2lw + 2lh + 2wh$

Sphere



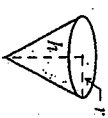
Volume: $V = \frac{4}{3}\pi r^3$
Surface Area: $S = 4\pi r^2$

Right Circular Cylinder



Volume: $V = \pi r^2 h$
Surface Area: $S = 2\pi r^2 + 2\pi rh$

Cone



Volume: $V = \frac{1}{3}\pi r^2 h$

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