

## Chapter 11 Formulas

Surface Area - **SQUARE UNITS<sup>2</sup>**

$$\text{Prism} = ph + 2B$$

"p" is perimeter; "h" is height; "B" is area of the base

$$\text{Cylinder} = 2PIrh + 2PIr^2$$

"r" is radius; "h" is height

$$\text{Pyramid} = \frac{p * \ell}{2} + B$$

"p" is perimeter; "ℓ" is slant height; "B" is area of the base

$$\text{Cone} = (PIr * \ell) + B$$

"r" is radius; "ℓ" is slant height; "B" is area of the base

$$\text{Sphere} = 4 * PI r^2$$

"r" is radius

$$\text{Cube} = 6e^2$$

"e" is edge

Volume - **CUBIC UNITS<sup>3</sup>**

$$\text{Prism} = l * w * h \text{ or } B * h$$

"l" is length; "w" is width; "h" is height; "B" is area of base

$$\text{Cylinder} = PI * r^2 * h$$

"r" is radius; "h" is height

$$\text{Pyramid} = \frac{B * h}{3}$$

"B" is area of base; "h" is height

$$\text{Cone} = \frac{PI * r^2 * h}{3}$$

"r" is radius; "h" is height

$$\text{Sphere} = \frac{4 * PI r^3}{3}$$

"r" is radius

$$\text{Cube} = e^3$$

"e" is edge

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Lateral Area - **SQUARE UNITS<sup>2</sup>**; "just the faces"; this is the EXPOSED area without the bases!

$$\text{Prism} = p * h$$

"p" is perimeter; "h" is height

$$\text{Cylinder} = 2PIrh$$

"r" is radius; "h" is height

$$\text{Pyramid} = \frac{p * \ell}{2}$$

p" is perimeter "ℓ" is slant height

$$\text{Cone} = PI * r * \ell$$

"r" is radius; "ℓ" is slant height

Sphere - none

$$\text{Cube} = 4e^2$$

"e" is edge

Euler's Formula - for a three-dimensional solid

Verbally: "The number of **F**aces plus **V**ertices equals the **E**dges plus two."

$$F + V = E + 2$$

Euler's Formula - for a two-dimensional network

Verbally: "For any two-dimensional network where **F** is the number of regions formed by **V** vertices linked by **E** edges (or paths) increased by one."

$$F + V = E + 1$$

