

## General Formulas

### Circumference of a Circle

$$O = 2 \cdot \pi \cdot r$$

### Area of a Circle

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

### Surface Area of a Ball

$$A = 4 \cdot \pi \cdot r^2$$

### Volume of a Ball

$$V = \frac{4}{3} \cdot \pi \cdot r^3$$

### Volume of a Cylinder (base times height)

$$V = A \cdot h$$

### Logarithms

$$\log(a \cdot b) = \log(a) + \log(b)$$

$$\log(a^c) = c \cdot \log(a)$$

$$\lg(a) = d \implies a = 10^d$$

$$\ln(a) = d \implies a = e^d$$