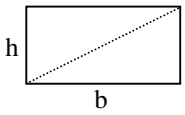
Some Useful MATH EQUATIONS

Area of rectangle = base × height

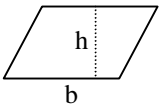


$$A_{rectangle} = b\,h$$

Diagonal of rectangle = square root of ((base × base) + (height × height))

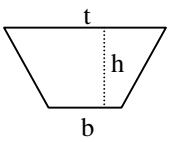
$$d_{rectangle} = \sqrt{b^2 + h^2}$$

Area of parallelagram = base × height



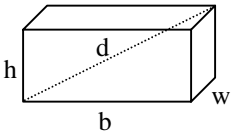
$$A_{parallelag\ ram} = b\,h$$

Area of trapezoid = $\frac{1}{2}$ (base + top) × height



$$A_{trapezoid} = \frac{(b+t)}{2}h$$

Volume of block = base × height × width

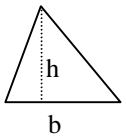


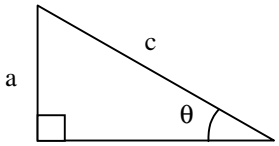
$$V_{block} = b\,h\,w$$

Diagonal of block =
square root of ((base × base) + (height × height) + (width × width))

$$d_{block} = \sqrt{b^2 + h^2 + w^2}$$

Area of triangle = $\frac{1}{2}$ base × height



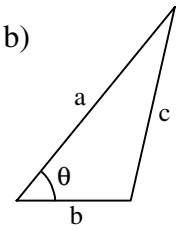


$$A_{triangle} = \frac{1}{2}b\,h$$

Trigonometric functions [for a right triangle]

$$\sin\theta = \frac{a}{c} = \frac{opposite\ side}{hypotenuse} \qquad \cos\theta = \frac{b}{c} = \frac{adjacent\ side}{hypotenuse} \qquad \tan\theta = \frac{\sin\theta}{\cos\theta} = \frac{a}{b} = \frac{opposite\ side}{adjacent\ side}$$

Pythagorean theorm [for a right triangle] (c × c) = (a × a) + (b × b)



$$c^2 = a^2 + b^2$$

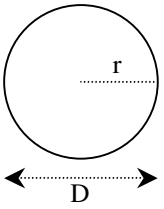
Law of Cosines (c × c) = (a × a) + (b × b) - (2 × a × b × cos θ)

$$c^2 = a^2 + b^2 - 2\,a\,b\cos\theta$$

Circumference of circle (distance around) = 3.14 × diameter

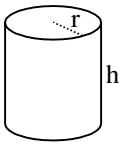
$$C_{circle} = \pi\,D$$

Radius of circle = $\frac{1}{2}$ diameter of circle



$$r = \frac{1}{2}D$$

Area of circle = 3.14 × radius × radius



$$A_{circle} = \pi\,r^2$$

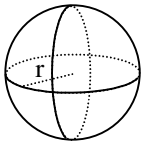
Volume of cylinder = 3.14 × radius × radius × height

$$V_{cylinder} = \pi\,r^2\,h$$

Surface area of cylinder (not including top or bottom) = 2 × 3.14 × radius × height

$$A_{cylinder} = 2\pi\,r\,h$$

Surface area of sphere = 4 × 3.14 × radius × radius



$$A_{sphere} = 4\pi\,r^2$$

Volume of sphere = $\frac{4}{3}$ × 3.14 × radius × radius × radius

$$V_{sphere} = \frac{4}{3}\pi\,r^3$$

Laws of Exponents

$$x^0 = 1 \qquad x^1 = x \qquad x^a x^b = x^{a+b} \qquad \frac{x^a}{x^b} = x^{a-b}$$

$$x^{-a} = \frac{1}{x^a} \qquad x^a y^a = (xy)^a \qquad (x^a)^b = x^{ab} \qquad x^{a/b} = \sqrt[b]{x^a} = (\sqrt[b]{x})^a$$