|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| [triangle base height](http://www.mathsisfun.com/triangle.html) | [Triangle](http://www.mathsisfun.com/triangle.html) Area = ½ × b × h b = base h = vertical height |  | [square](http://www.mathsisfun.com/geometry/square.html) | [Square](http://www.mathsisfun.com/geometry/square.html) Area = a2 a = length of side |
| [rectangle](http://www.mathsisfun.com/geometry/rectangle.html) | [Rectangle](http://www.mathsisfun.com/geometry/rectangle.html) Area = w × h w = width h = height |  | [parallelogram](http://www.mathsisfun.com/geometry/parallelogram.html) | [Parallelogram](http://www.mathsisfun.com/geometry/parallelogram.html) Area = b × h b = base h = vertical height |
| [trapezoid](http://www.mathsisfun.com/geometry/trapezoid.html) | [Trapezoid (US)](http://www.mathsisfun.com/geometry/trapezoid.html) [Trapezium (UK)](http://www.mathsisfun.com/geometry/trapezoid.html) Area = ½(a+b) × h h = vertical height |  | [circle](http://www.mathsisfun.com/geometry/circle-area.html) | [Circle](http://www.mathsisfun.com/geometry/circle-area.html)  Area = π × r2  Circumference = 2 × π × r r = radius |
| [ellipse](http://www.mathsisfun.com/geometry/ellipse.html) | [Ellipse](http://www.mathsisfun.com/geometry/ellipse.html) Area = πab |  | [sector](http://www.mathsisfun.com/geometry/circle-sector-segment.html) | [Sector](http://www.mathsisfun.com/geometry/circle-sector-segment.html) Area = ½ × r2 × θ  r = radius θ = angle in **radians** |

**Area of Plane Shapes**

**Volume Formulas**

cube = a 3 http://www.math.com/tables/geometry/cube.gif

rectangular prism = a b c http://www.math.com/tables/geometry/rprism.gif

irregular prism = **b** h http://www.math.com/tables/geometry/prism.gif

cylinder = **b** h = *pi* r 2 h http://www.math.com/tables/geometry/cylinder.gif

pyramid = (1/3) **b** h http://www.math.com/tables/geometry/pyrimid.gif

cone = (1/3) **b** h = 1/3 *pi* r 2 h http://www.math.com/tables/geometry/cone.gif

sphere = (4/3) *pi* r 3 http://www.math.com/tables/geometry/circle.gif

ellipsoid = (4/3) *pi* r1 r2 r3 http://www.math.com/tables/geometry/ellipoid.gif

***Properties of Exponents***

1. xa *xb* = *xa+b* Examples: *x*3 x2 = x5, x1/2 *x*1/3 = *x*5/6, *x*3 x 1/2 = *x*5/2

2. xa xb = xa *b* Examples: *x*5 *x*3 = *x*2, *x*3 *x*5 = *x* 2, *x*3 *x*1/2 = *x*5/2

3. (*xa*)*b* = *xab* Examples: (*x*3)2 = *x*6, (*x* 1/2)7 = x 7/2, (*x*2/3)5/7 = *x*10/21

