# MATHEMATICS 1000 (Calculus I)
# Basic Geometrical Formulae

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|---|---|---|
| right triangle (legs $a$, $b$, hypotenuse $c$) | area | $A = \frac{1}{2}ab$ |
| | perimeter | $P = a + b + c$ |
| rectangle (length $\ell$, width $w$) | area | $A = \ell w$ |
| | perimeter | $P = 2\ell + 2w$ |
| square (sidelength $\ell$) | area | $A = \ell^2$ |
| | perimeter | $P = 4\ell$ |
| circle (radius $r$) | area | $A = \pi r^2$ |
| | circumference | $C = 2\pi r$ |

Table 1: Basic two-dimensional geometrical formulae.

| | | |
|---|---|---|
| rectangular prism (length $\ell$, width $w$, height $h$) | volume | $V = \ell w h$ |
| | surface area | $S = 2[\ell w + wh + \ell h]$ |
| cube (sidelength $\ell$) | volume | $V = \ell^3$ |
| | surface area | $S = 6\ell^2$ |
| sphere (radius $r$) | volume | $V = \frac{4}{3}\pi r^3$ |
| | surface area | $S = 4\pi r^2$ |
| (right circular) cylinder[†] (radius $r$, height $h$) | volume | $V = \pi r^2 h$ |
| | surface area | $S = 2\pi r^2 + 2\pi r h$ |
| (right circular) cone[†] (radius $r$, height $h$) | volume | $V = \frac{1}{3}\pi r^2 h$ |
| | surface area | $S = \pi r^2 + \pi r\sqrt{r^2 + h^2}$ |

Table 2: Basic three-dimensional geometrical formulae.

[†] You are not required to memorise the formulae related to cylinders and cones. If they are needed for the Final Exam, they will be provided to you.