

# Precalculus formula sheet

| Topic                | Formula                                                  |
|----------------------|----------------------------------------------------------|
| Quadratic formula    | $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$                 |
| Vertex               | $h = -b/2a, k = f(h)$                                    |
| Distance             | $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$                   |
| Slope                | $(y_2 - y_1)/(x_2 - x_1)$                                |
| Log rules            | $\log(xy) = \log x + \log y; \log(x^n) = n \log x$       |
| Change of base       | $\log_b x = \ln x / \ln b$                               |
| Pythagorean identity | $\sin^2 \theta + \cos^2 \theta = 1$                      |
| Radians              | $\theta(\text{rad}) = \theta(\text{deg}) \times \pi/180$ |
| Compound interest    | $A = P(1 + r/n)^{nt}$                                    |
| Exponential growth   | $A = A_0 e^{kt}$                                         |

## Notes