SACE Stage 2 Mathematical Methods Formula Sheet

Original worked revision examples with notes on units and assumptions.

Use the board PDF below for the official sheet. Coverage of examples varies by subject.

Official reference material

SACE Board 2025 Mathematical Methods exam PDF, formula sheet on page 37

What to work out beyond the sheet

Keep the domain restriction from the original expression when simplifying a derivative.

Formulas and worked examples

Calculus · quotient rule

Formula or reference: $(u/v)' = (u'v - uv')/v^2$

Units and conditions: v must be nonzero at the input.

Worked example: For $y = x/(x + 2)$, $y' = 2/(x + 2)^2$. At $x = 2$ the gradient is 1/8.

Probability · binomial complement

Formula or reference: $P(X \geq 1) = 1 - P(X = 0) = 1 - (1 - p)^n$.

Units and conditions: Use independent trials with one success probability p.

Worked example: In three trials at $p = 0.20$, at least one success has probability $1 - 0.8^3 = 0.488$.