



MATHEMATICAL METHODS (UNITS 1&2) (YEAR 11) · PRACTICE ASSIGNMENT

Functions and Quadratics

FUNCTIONS AND GRAPHS

MEDIUM

Work through each question in order. Show your working in the space provided where it helps — there's no time limit, just do your best.

- 1

Expand and simplify: $(x - 3)(x + 5)$
- 2

Factorise: $x^2 - 7x + 12$
- 3

Solve for x : $2x^2 - 5x - 3 = 0$
- 4

State the equation of the graph obtained by translating $y = x^2$ three units left and two units up.
- 5

Simplify: $(2a^3b^2)^2 \div (4a^2b)$
- 6

Solve for x : $3^{(x + 1)} = 27$
- 7

Find the value of $\log_2(32)$.
- 8

Sketch $y = (x - 2)^2 - 4$, stating the turning point and the x -intercepts.
- 9

A function is defined by $f(x) = 2x - 1$ for $x \in [0, 5]$. State the range of f .
- 10

Solve the simultaneous equations $y = x + 1$ and $y = x^2 - 1$.
- 11

Describe the transformation that maps $y = \sin(x)$ to $y = \sin(x) + 3$.
- 12

A ball's height in metres after t seconds is $h(t) = 20t - 5t^2$. Find the time of maximum height.

TEACHER'S REMARKS

Score: _____ / 12