Exercise 1

Paper 1 style · No calculator

1 5 marks SL 2.9

●○○ Routine

Let $f(x) = 2 \times 3^x + 1$.

(a) Write down the y-intercept of the graph of f. **[1]**

(b) Write down the equation of the horizontal asymptote of the graph of f. **[1]**

(c) Write down the range of f. **[1]**

(d) Solve $f(x) = 55$. **[2]**

The markscheme is on the next page: try the question first. Written and verified by a practising IB mathematics teacher, produced with AI assistance; solved twice and recomputed by software. Not affiliated with or endorsed by the International Baccalaureate Organization.
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MARKSCHEME (a)

3 **A1**

Total 1 mark

MARKSCHEME (b)

$y = 1$ **A1**

Total 1 mark

MARKSCHEME (c)

$f(x) > 1$ **A1**

Total 1 mark

MARKSCHEME (d)

$3^x = 27$ **(M1)**

$x = 3$ **A1**

Total 2 marks