Exercise 3

Paper 2 style · Graphic display calculator

3 6 marks SL 2.8 · 2.10 ●●● Demanding

Let $f(x) = \dfrac{x+1}{x-2}$, for $x \neq 2$, and $g(x) = 2x - 3$.

(a) Write down the equations of the asymptotes of the graph of f. **[2]**

(b) Find the x-coordinates of the points where the graphs of f and g intersect. **[2]**

(c) Hence solve $f(x) > g(x)$. **[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)

$x = 2$ **A1**

$y = 1$ **A1**

Total 2 marks

MARKSCHEME (b)

$x = 0.775 \ \ (0.775255\ldots)$ **A1**

$x = 3.22 \ \ (3.22474\ldots)$ **A1**

Total 2 marks

MARKSCHEME (c)

$x < 0.775$ **A1**

$2 < x < 3.22$ **A1**

Total 2 marks