Exercise 1

Paper 1 style · No calculator

1 6 marks AHL 2.15 ●●○ Typical

Answer the following without a calculator.

(a) Solve the inequality $\frac{3x-2}{x+2} \geq 2$. **[4]**

(b) Solve the inequality $x^3 < 9x$. **[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.
© 2026 Hence

Exercise 1 — markscheme

Paper 1 style · No calculator

1 6 marks AHL 2.15 ●●○ Typical

Answer the following without a calculator.

(a) Solve the inequality $\frac{3x-2}{x+2} \geq 2$. **[4]**

(b) Solve the inequality $x^3 < 9x$. **[2]**

MARKSCHEME (a)

$\frac{3x-2}{x+2} - 2 \geq 0, \ \frac{x-6}{x+2} \geq 0$ **M1A1**

critical values 6 and -2 **(A1)**

$x < -2$ or $x \geq 6$ **A1**

Total 4 marks

Note M1 for one side zero, not multiplying by $x+2$.

MARKSCHEME (b)

$x(x-3)(x+3) < 0$ **M1**

$x < -3$ or $0 < x < 3$ **A1**

Total 2 marks