

Advanced Higher Maths
SQA 2024 Paper 1
Question 5



The function $f(x)$ is defined by $f(x) = x^3 - x$, $x \in \mathbb{R}$.

(a) Determine whether $f(x)$ is even, odd or neither. 2

(b) Show that the graph of $y = f(x)$ has a point of inflection. 2

Answer methods:

(a) Prove that $f(-x) = -f(x)$ and conclude that f is odd.

(b) Solve $f''(x) = 0$, consider the sign of $f''(x)$ for $x < 0$ and $x > 0$, and state conclusion.