

6 The function f is such that $f(x) = (3x + 2)^3 - 5$ for $x \geq 0$.

(i) Obtain an expression for $f'(x)$ and hence explain why f is an increasing function. [3]

(ii) Obtain an expression for $f^{-1}(x)$ and state the domain of f^{-1} . [4]