6

The function f is defined by $f(x) = \dfrac{2}{x^2} + 4$ for $x < 0$. The diagram shows the graph of $y = f(x)$.

(a) On this diagram, sketch the graph of $y = f^{-1}(x)$. Show any relevant mirror line. [2]

(b) Find an expression for $f^{-1}(x)$. [3]

....

....

....

....

....

....

....

....

....

(c) Solve the equation $f(x) = 4.5$. [1]

....

....

(d) Explain why the equation $f^{-1}(x) = f(x)$ has no solution. [1]

....

....