

5. The function f is defined by

$$f(x) = \frac{2x - 3}{x^2 + 4} \quad x \in \mathbb{R}$$

(a) Show that

$$f'(x) = \frac{ax^2 + bx + c}{(x^2 + 4)^2}$$

where a , b and c are constants to be found.

(3)

(b) Hence, using algebra, find the values of x for which f is decreasing.
You must show each step in your working.

(3)