

Question 1

(25 marks)

- (a) Write the function $f(x) = 2x^2 - 7x - 10$, where $x \in \mathbb{R}$, in the form $a(x + h)^2 + k$, where a , h , and $k \in \mathbb{Q}$.

- (b) Hence, write the minimum point of f .

- (c) (i) Explain why f must have two real roots.

- (ii) Write the roots of $f(x) = 0$ in the form $p \pm \sqrt{q}$, where p and $q \in \mathbb{Q}$.

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