

QUESTION

1. (10 marks) (10 marks)

1.1. (5 marks)

Consider the function $f(x) = x^2 + 2x + 1$. Find the minimum value of $f(x)$ for $x \in \mathbb{R}$.

1.2. (5 marks)

Consider the function $f(x) = x^2 + 2x + 1$. Find the maximum value of $f(x)$ for $x \in \mathbb{R}$.

2. (10 marks)

- (a) (5 marks) Find the derivative of $f(x) = x^2 + 2x + 1$.
- (b) (5 marks) Find the second derivative of $f(x) = x^2 + 2x + 1$.

3. (10 marks)

- (a) (5 marks) Find the derivative of $f(x) = x^2 + 2x + 1$.
- (b) (5 marks) Find the second derivative of $f(x) = x^2 + 2x + 1$.

