**ROLLE'S THEOREM**

Suppose \( f \) is a function defined on some closed interval \([a, b]\) such that

(i) \( f \) is continuous on \([a, b]\)

(ii) \( f \) is differentiable on \((a, b)\)

(iii) \( f(a) = f(b) \)

Then there is a real number \( c \) in \((a, b)\) such that \( f'(c) = 0 \).

**IDEA:**

Graph showing the function \( y = f(x) \) with points \( a, c_1, c_2, b \) and the condition \( f(a) = f(b) \).