Consider the function \( f(x) = x^3 + x - 1 \).

1. Verify that \( f \) satisfies both hypothesis of the Mean Value Theorem on the interval \([0, 2]\).

   Since \( f \) is a polynomial, it is continuous and differentiable on \( \mathbb{R} \). In particular,
   
   (a) \( f \) is continuous on \([0, 2]\) and
   
   (b) \( f \) is differentiable on \((0, 2)\).

2. Find all numbers \( c \) in the interval \([0, 2]\) that satisfy the conclusion of the Mean Value Theorem.

   We want all \( c \in (0, 2) \) such that
   
   \[
   f'(c) = \frac{f(2) - f(0)}{2 - 0} = \frac{(2^3 + 2 - 1) - (0^3 + 0 - 1)}{2} = \frac{9 + 1}{2} = 5.
   \]

   \[
   f'(x) = 3x^2 + 1
   \]

   Solve \( f'(x) = 5 \) for \( x \).

   \[
   3x^2 + 1 = 5
   \]

   \[
   3x^2 = 4
   \]

   \[
   x^2 = \frac{4}{3}
   \]

   \[
   x = \pm \frac{2}{\sqrt{3}}
   \]

   Now \( x = \frac{2}{\sqrt{3}} \in (0, 2) \)

   \[
   \text{and} \quad f'(\frac{2}{\sqrt{3}}) = 5
   \]