Problem 1: Write two equations.

Problem 2: Give an example of an identity:

Problem 3: Draw, by hand, a rough sketch of the graph of the following functions:

\[ y = x^2 + x \quad \text{and} \quad y = e^x \]

\[ y = 1/x \quad \text{and} \quad y = \sqrt{x} \]
Problem 4: Write the formula for the roots of the quadratic equation
\[ ax^2 + bx + c = 0. \]

Problem 5: The 'product rule' for finding a derivative is
\[ (uv)' = u'.v + u.v' \]
Write the 'quotient rule' for finding a derivative.

Problem 6: What does the Fundamental Theorem of Calculus says?

Problem 7: Write a function which equals its derivative

Problem 8: Write a function which equals two times its derivative.

Problem 9: Write two functions, \( f(x) \) and \( g(x) \), such that \( f'(x) = g(x) \) and \( g'(x) = -f(x) \)

Problem 10: What is the sum of the first ten natural numbers?