

Find the derivative of  $f(x) = e^x \ln x + x^2$  using the concept of total derivative.

$$f'(x) = (e^x)' \cdot \ln(x) + e^x \cdot (\ln(x))' + (x^2)' = e^x \cdot \ln(x) + e^x \cdot \frac{1}{x} + 2x$$