Justify your answers to the following questions.

Question 1. Calculate the following integrals:

a. [2 marks] \( \int (x^3 + 2) \cos(x^4 + 8x) \, dx \).

b. [2 marks] \( \int_{-1}^{1} \frac{\tan(\ln|x^2 + 1|)}{x} \, dx \).

Question 2. [4 marks] Determine the area of the region bounded by \( y = \frac{8}{x} \), \( y = 2x \), and \( x = 4 \).