1. Estimate the area under the graph of \( f(x) = 8 - x^2 \), from \( x = -2 \) to \( x = 2 \) using four rectangles and left endpoints.

2. Express the integral \( \int_2^4 (4 - x^2) \, dx \), as a limit of a Riemann Sum, then evaluate the limit. [No other method will be accepted]
3. By interpreting it as an area, find the value of the integral

\[ \int_{-5}^{0} (2x + 4\sqrt{25 - x^2}) \, dx \]

4. Find the slope of the tangent line to the graph of the function

\[ f(x) = \int_{\tan(x)}^{\cos(2x)} \ln(1 + 2t) \, dt \] at \( x = \frac{\pi}{4} \).