Exercise 1. Use Cauchy Integral Formula to compute the contour integral

\[ \int_C \frac{\cos(2iz^2)}{(z - 2i)^3} \, dz, \]

where \( C \) is any positively oriented simple closed contour enclosing \( 2i \).

Example 2.

1. Find the Laurent series of the function \( f(z) = \frac{1}{1 + z^2} \) in the annular domain \( D \) given by: \( 0 < |z - i| < 2 \).
2. Evaluate the contour integral

\[ I = \oint_C f(z) \, dz, \]

where \( C \) is the positively oriented circle \( |z - i| = 1 \).