1. Compute the Laurent expansion of \( w(z) = \frac{z^{122} + 3z^{41} + 1}{z^{568}} \) around \( z = 0 \). Use the formula, and then check your answer as we did in class.

2. Compute the Laurent expansion of \( w(z) = \frac{e^z}{z} \) around \( z = 0 \).

3. Evaluate the integral \( I = \oint_C \frac{4z^3 - 1}{z(z - 1)} \, dz \) around a contour centered around \( z = 0 \) and of radius \( |z| = 5 \).

To be continued...