

HW #05
Due: 02/20/2019

1. Expand

$$f(z) = \frac{1}{1 - \cos z} \quad \text{about } z = 0,$$

by the Laurent series (obtain the first 3 terms) in $0 < |z| < \pi/2$.

2. Evaluate the following complex integral.

$$I = \int_{|z-i|=2} \frac{e^z}{z(z^2 + 2)} dz.$$

Write down the real part and the imaginary part separately.