

Additional problems for HW 4

Use the Cauchy Integral Formula or the Cauchy Integral Theorem where appropriate:

1. $\oint \frac{dz}{e^z (z-2)}$ Counter-clock-wise (CCW) around $\frac{x^2}{9} + \frac{y^2}{16} = 1$

2. $\frac{1}{2\pi i} \oint \frac{\sinh z}{z^2 + z + 1} dz$ CCW around $|z-2i|=2$

3. $\frac{1}{2\pi i} \oint \frac{\cos(\sinh z)}{z^2 + z + 1} dz$ CCW around $|z-1-i|=3/2$

4. $\oint \frac{[\text{Ln}(z/e)]^2}{z^2 - 6z + 5} dz$ CCW around $|z-1|=1/2$