Homework 5: MATH 4180

Collaboration Policy : You may, in fact are encouraged to, work on the problems with other students. You must write up your solutions by yourself.

1. Let γ be the directed line segment from 0 to $i + 1$. Compute

$$\int_\gamma \operatorname{Re}(z) dz.$$

2. Let γ be the circle of radius 1 centered at 0, traversed counter-clockwise. Compute

$$\int_\gamma \frac{1}{z^2 - 4z + 4} dz.$$

3. Let γ be the circle of radius 1 centered at the origin, traversed clockwise. Compute

$$\int_\gamma \frac{2z - 2}{z^2 - 2z} dz.$$