

학부 졸업시험 응용복소함수론 2020.6.2.

1. Determine if $f(x) = y + ix$ is analytic in the whole complex plane. Verify your answer.
2. True or false.
 - (a). Every analytic function in an open set is differentiable infinitely many times.
 - (b). Every analytic function in an open set has an antiderivative.
 - (c). Every analytic function in a simply connected open set has an antiderivative of all orders.

3. Find $\int_C f(z)dz$,

where $C : Z(t) = \cos t + i \sin t (0 \leq t \leq 2\pi)$ and $f(z) = 1/(z \sin z)$.