

Show all work. 5 points each.

1. a) Find the real and imaginary parts of $f(z) = 1/z$.

b) Show the Cauchy-Reimann equations are satisfied for $z \neq 0$.

c) Use b) to find the real and imaginary parts of $g(x) = -z^{-2}$.

2. Find the integral $\oint_C (\bar{z})^2 dz$ where $C = \{z \mid |z| = 1\}$.