Assignment 13

MA06 Complex Analysis Deadline 11:59 AM, 20190205

1. Use (6.5.1), (6.5.2), or (6.5.4) to find the residue at each pole of the given function.

   (a) $f(z) = \frac{z}{z^2+16}$

   (b) $f(z) = \frac{2z-1}{(z-1)^4(z+3)}$

2. Use Cauchy's residue theorem, where appropriate, to evaluate the given integral $\oint_C \frac{1}{(z-1)(z+2)^2} dz$ along the indicated contours.

   (a) $|z| = \frac{1}{2}$

   (b) $|z| = \frac{3}{2}$

3. Use Cauchy's residue theorem to evaluate the given integral $\oint_C \frac{1}{z^2+4z+13} dz$ along the indicated contour $C : |z - 3i| = 3$.

   Notice: Please write Your Name and Student ID when you submit.