Assignment 12

MA06 Complex Analysis Deadline 11:59 AM, 20190129

1. Determine the zeros and their order for the given function.
   (a) $f(z) = (z + 2 - i)^2$
   (b) $f(z) = e^{2z} - e^z$
2. Determine the order of the poles for the given function.
   (a) $f(z) = 5 - \frac{6}{z^2}$
   (b) $f(z) = \frac{1+4i}{(z+2)(z+i)^4}$
3. Use an appropriate Laurent series to find the indicated residue.
   (a) $f(z) = \frac{2}{(z-1)(z+4)}$; $\text{Res}(f(z), 1)$
   (b) $f(z) = \frac{1}{z^3(1-z)^3}$; $\text{Res}(f(z), 0)$

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