

**Reading:** *Skim* Boas Chapter 1 on the convergence of series so you can recall some of the issues in play. Read Boas sections 2.6 and 2.7 on convergence in the complex plane.

- (1) Solve the second order, non-homogeneous ODE,

$$u'' + u' + 2u = \frac{1}{2}e^{4x} + \sin x$$

Please determine the general solution.