1. Use the Real Method of Undetermined Coefficients to find a general solution for each of the following.

(a) \[ y'' - y' - 2y = 4e^{3t} - 4t \]

(b) \[ y'' - y' - 2y = 20 \cos 2t \]

(c) \[ y'' - y' - 2y = 18e^{2t} \]
2. Use the Real Method of Undetermined Coefficients to find the solution to the initial value problem

\[ y'' + 4y = \sin 2t, \quad y(0) = 2, \ y'(0) = 0. \]
3. Use the Complex Method of Undetermined Coefficients to find a general solution for each of the following.

(a) \[ 3y'' - y' - 2y = 20 \sin 2t \]

(b) \[ 4y'' + 4y = \cos 2t \]