[Q1] Find the general solution of the following DEs.

i) \( y'' + 2y' + y = 4e^{-t}, \quad t > 0 \).

ii) \( y^{(4)} + 2y' + y = (t^2 + 4) \cos t \).

(Don’t evaluate the constants).
[Q2] Use method of reduction of order to find a second solution of the DE 
\[ 2x^2y'' + xy' - y = 0, \quad x > 0 \quad \text{and} \quad y_1 = x. \]
[Q3] Find the first four terms in each of two linearly independent solutions of the given DE about $x = 0$

$y'' + 3xy' + 3y = 0$. 