Exercise 1 (5 points)
Solve the differential equation 
\[ y'' + 3y' + 2y = x + e^x \sin 3x \]

Exercise 2 (5 points) Find a homogeneous differential equation with constant coefficients whose solution is 
\[ c_1 e^x + c_2 xe^x + c_3 \cos x + c_4 \sin x \]
Exercise 1 (5 points)
Solve the differential equation #

\[ y'' - 3y' + 2y = x + e^x \cos 3x \]

Exercise 2 (5 points) Find a homogeneous differential equation with constant coefficients whose solution is#

\[ c_1 + c_2 x + c_3 \sin x + c_4 \cos x \]