MAP 2302: Worksheet July 9, 2018   **Group nr:** _____

1. Decide if the UC Method for finding a particular solution applies for the DEs below and, if it does, write the form of your particular solution. You **DO NOT** have to find the coefficients:

(a) $y^{(4)} - y^{(2)} - 12y = x^2$

(b) $y'' + (\cos x)y = e^x$

(c) $y'' - 4y' + 5y = xe^{2x}\sin x$

2. Use the VP method to find the general solution of the DE

$$y'' + 6y' + 9y = \frac{e^{-3x}}{x^3}$$

3. Solve the following Cauchy-Euler equation

$x^3y''' - 3x^2y'' + 6xy' - 6y = 0$