

MA22S3 Tutorial Sheet 9

7–8 December 2016

1. Use the method of variation of parameters to find the solution to the following initial value problem.

$$y'' - 2y' + y = 2xe^x, \quad y(0) = -1, \quad y'(0) = 0.$$

2. Find the first four terms in the series expansion about $x = 0$ of the solution to the following initial value problem.

$$y' + 2xy = e^x, \quad y(0) = 1.$$