MA22S3 Tutorial Sheet 8

30 November – 1 December 2016

1. Find the general solution to
   \[ h''(x) + \frac{2}{x} h'(x) + \frac{3}{x^2} h(x) = 0. \]

2. Find the general solution to
   \[ x^2 g''(x) - xg'(x) + g(x) = x^6. \]

3. Find the general solution to
   \[ \ddot{f}(t) + \dot{f}(t) - 6f(t) = t. \]

4. Find the solution to
   \[ \ddot{f}(t) + \dot{f}(t) - 6f(t) = e^{4t} \]
   with initial values \( f(0) = 0, \dot{f}(0) = 0. \)