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 $f(0) = 0, \dot{f}(0) = 0$.