MATH 3113 – Homework assigned on 10/3/13

Sec. 3.5: Problems 21, 23, 27, 28, 33, 43(a).

Additional problem.

Find the general solutions of of the following nonhomogeneous linear second order ODEs. (Since the calculations of the coefficients of a particular solution $y_p(x)$ of the non-homogeneous equation can be long, while checking that a function satisfies the non-homogeneous equation is not too difficult, it is a good idea to check directly whether the function $y_p(x)$ you have found does satisfy the equation.)

(a) $(D+1)(D-3)y = 24\,e^{-3x}$

(b) $y'' + 9y = 30\sin 3x$