Assignment-3

1. **Find the general solution of the equation** $y''' + 6y'' + 11y' + 6y = 0$.
2. **Solve** $y'''' + 8y'' + 16\,y = 0$.
3. **Solve** $y'' - 3y' + 2y = e^{3x}$ **by the method of undetermined coefficients.**
4. **Use method of undetermined coefficients to find the general solution of the equation** $y'' + 2y' + 4y = 111\,e^{2x}\cos 3x$.
5. **Solve** $x^2y'' + 5xy' + 7y = 0$.
6. **Find the general solution of** $x^2y'' - xy' + 2y = x\,\ln x$.
7. **Solve the equation to find the general solution of the equation** $(1+x)^2y'' + (1+x)y' + y = 4\,\cos(\ln(1+x))$.
8. **Find the general solution of the second order equation** $y'' + y = 1/(1+\sin x)$, **by the method of variation of parameters.**
9. **Find the general solution of the second order equation** $y'' - 2y' + y = x\,e^x\,\ln x$, **by the method of variation of parameters.**
10. **Find the general solution of the second order equation** $xy'' - (2x+1)y' + (x+1)y = x^2$, **knowing that** e^x **is one solution of the homogeneous equation.**