

系級：_____ 學號：_____ 姓名：_____

1. 試以參數變異法求解下述微分方程式：

(1) $y'' - 4y = 8x^2 - 2x$

(2) $y'' + 4y = \tan 2x$

(3) $y'' - 6y' + 9y = x^{-2}e^{3x}$

2. 試解下述微分方程：

(1) $x^3y''' + x^2y'' - 2xy' + 2y = x^{-2}$

(2) $x^2y'' - 3xy' + 4y = 3x^2$

(3) $xy'' - y' + 2x^{-1}y = 2\cos(\ln x)$

(4) $x^2y'' - 2xy' + 2y = x\ln x$

(5) $x^2y'' - 4xy' + 6y = -7x^4\sin x$

(6) $xy'' - y' = 2x^2e^x$

(7) $x^2y'' + xy' + y = \sec(\ln x)$