

系級：_____ 學號：_____ 姓名：_____

試解下述一階線性微分方程式：

1. (1) $xy' + (1+x)y = e^x$
(2) $(x-2)y' = y + 2(x-2)^3$
(3) $y' - 2y \cot(2x) = 1 - 2x \cot(2x) - 2 \csc(2x)$
(4) $y' = 2\frac{y}{x} + x^2 e^x$
(5) $y' + y = \sin x$

2. (1) $y' - y = xy^5$
(2) $y' + \frac{3}{x}y = -2xy^{\frac{5}{2}}$

3. (1) $y' - y + e^{-x}y^2 - e^x = 0$
(2) $y' = xy^2 + (-8x^2 + \frac{1}{x})y + 16x^3, y(2) = 6$