

系級：_____ 學號：_____ 姓名：_____

- 試求：(1) $y' = \sec^2 y$ (2) $y' = e^{2x-1}y^2$
- 試求： $xy' = y^2 + y$ (hint: $u = \frac{y}{x}$)
- 試求： $y' = 1 + 4y^2$, $y(1) = 0$
- 試求： $y' = (x + y - 2)^2$, $y(0) = 2$ (hint: $u = x + y - 2$)
- 試求： $xy' = y + 3x^4 \cos^2(\frac{y}{x})$, $y(1) = 0$ (hint: $u = \frac{y}{x}$)

參考解答：

- (1) $\frac{1}{2}y + \frac{1}{4}\sin 2y = x + c$
(2) $-\frac{1}{y} = \frac{1}{2}e^{2x-1} + c$
- $y = \frac{-x}{x+c}$
- $y = \frac{1}{2}\tan(2x-2)$
- $y = \tan x - x + 2$
- $\tan \frac{y}{x} = x^3 - 1$