

系級：_____ 學號：_____ 姓名：_____

試以全微分法求解下述各題

1. (1) $(x - y^3)dy = ydx$

(2) $(e^x \sin y + 3y)dx + (3x + e^x \cos y)dy = 0$

(3) $2xydx + (1 + x^2)dy = 0$

(4) $(2y + e^y + 6x^2)\frac{dy}{dx} + 4 + 12xy = 0$

2. 試以 Picard 法求解

$$y' = 2y^2, \quad y(0) = 1$$