

7. Solve the following first-order equations:

(a)

$$x^3 \frac{dy}{dx} = 2y^2$$

[3]

(b)

$$\frac{dy}{dx} + \frac{y}{x+1} = \cos x$$

[3]

(c)

$$(1 - x^2) \frac{dy}{dx} - xy = x$$

where  $y = 1$  when  $x = 0$ .

[4]