

2.

$$f(x) = \ln(1 + x) \quad -1 < x \leq 1$$

- (a) Use differentiation to show that the first four non-zero terms of the Maclaurin series of $f(x)$ are

$$x - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} \tag{5}$$

- (b) Use the result in part (a) to find the first four non-zero terms of the series expansion of

$$\ln\left(\frac{1 + 2x}{(1 - 2x)^2}\right) \tag{3}$$