TUTORIAL SHEET NUMBER 6

6.1 Logarithmic Differentiation

Question 1. Use logarithmic differentiation to find \( y' \) for the following equations

i) \( y = (2x + 1)^5(x^4 - 3)^6 \).

ii) \( x^y = y^x \) for \( x > 0 \).

6.2 Differentials

Question 2. The edge of a cube was found to be 30cm with a possible error in measurement of 0.1cm. Use differentials to estimate the linear error, relative error and percentage error in computing the volume of the cube.