

Week One 01.01-01.03 Free Response Spring 2021

1) A Maclaurin series for a function is given by

$$f(x) = x - \frac{x^3}{3!} + \frac{x^5}{5!} + \dots$$

How many terms should be used in the series to consider at least 2 significant digits are correct in your answer $f(0.1)$?

2) The integral $\int_3^6 x^2 dx$ can be calculated approximately by finding the area under a straight line drawn between the function values from $x = 3$ to $x = 6$. What is the truncation error?