FYIT Semester-1
Numerical Methods
Assignment 1
Unit 1

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1. Find Taylor polynomials of order 1 and 2 of f(x)
   f(x)=$\sin x$, $\quad a = \frac{\pi}{4}$
   $f(x) = x^3 + 2x^2$, $\quad a = 2$

2. Find Maclaurin Series of the following functions
   e^{-x}
   $\sin 3x$
   $2\cos 3x$

3. Find the Taylor series generated by f at x=a
   f(x)=$x^3 - 2x + 4$, $\quad a = 2$
   $f(x) = x^4 + x^2 + 1$, $\quad a = -2$
   $f(x) = e^x$, $\quad a = 2$

4. Find Number of significant digits in following numbers:
   0.025178
   1.257×10^8
   4.50028
   50.259
   1000.0257 $\times 10^{-5}$

5. Round off the following numbers to 4-significant digits.
   3.26425
   35.4673
   4985561
   0.70035
   0.00032217
   1.6583
   3.14159

6. If true value = $\frac{10}{3}$, approximate value = 3.33 find the absolute and relative error.

7. If $\pi = \frac{22}{7}$ is approximated as 3.14 find the absolute,relative and percentage error.