Subject : 20101482. G.M. Refatul Islam. Date

(a) From above we got,

$a_0 = 1, \quad a_1 = 1.3702$

Therefore, the linear polynomial $P_1(x)$ is $= 1 + 1.3702x$

(b) $P_1(0.75) = 1 + (1.3702 \times 0.75)$

$= 2.02765$

(c) Given,

$f(x) = e^x,$

$f(0.75) = e^{0.75}$

$= 2.11700$

Subject

Therefore,
the error should be,

$$|f(x) - P_1(x)|$$

$$= |2.11700 - 2.02765|$$

$$= 0.08935$$

(4) To reduce the error in the previous part, we need to include more nodes to get a higher degree approximating polynomial. If the dimension of the function reaches close to $\infty$, then it will more accurate. or close to 0