

1. Let $f(x)$ is a function. Given nodes are $\{0, 0.7, 1.4, 2.1\}$ and the values of the function of the nodes are $\{2, 2.80, 3.431, 7.05\}$.
 - a) Find the Vandermonde matrix for a linear polynomial passing through $(0,2)$ and $(0.7, 2.80)$.
 - b) Find the Reverse Vandermonde matrix of the matrix in (a).
 - c) Find the value of a_0 and a_1 .

2. In the previous questions, you have computed the coefficients, a_0 and a_1 of the linear polynomial that passes the points $(0,2)$ and $(0.7,2.80)$. Using these results, compute the following:
 - a) Write down the linear polynomial $p_1(x)$.
 - b) Compute $p_1(0.50)$.
 - c) If $f(x)=e^x$, find the error $|f(x)-p_1(x)|$ at $x=0.50$.
 - d) If we would like to reduce the error in the previous part, what we need to do.