

MCQ Answers:

GRADED QUIZ #1 SOLUTION

#1: $\begin{pmatrix} 1 & 0 \\ 1 & 0.6 \end{pmatrix}$

#2: $\begin{pmatrix} 1 & 0 \\ -1.667 & 1.667 \end{pmatrix}$

#3: $a_0 = 1.2, a_1 = 1.3702$

Answer the Problem Part:

(1) $p_1(x) = 1 + 1.3702x$ ✓

(2) $p_1(0.75) = 1 + (1.3702)(0.75) = 2.0277$ ✓ (Need to be 5 sig. fig. because question is in 5 sig. fig.)

(3) Error = $\left| f(0.75) - p_1(0.75) \right|$
 $= \left| e^{0.75} - (1 + 1.3702 \times 0.75) \right|$
 $= 0.089350$ ✓ (upto 5 sig fig.)

(4) By definition: $\lim_{n \rightarrow \infty} p_n(x) = f(x)$

So we need to increase the number of nodes to reduce the error in the previous part.