EX.3.2.2, Sauer3

a. Given the data points $(1, 0)$, $(2, \ln(2))$, and $(4, \ln(4))$, find the degree 2 interpolating polynomial.

b. Use the result of (a) to approximate $\ln(3)$.

c. Use Theorem 3.3 to give an error bound for the approximation in part (b).

d. Compare the actual error to your error bound.