Full Name: ID#   **Ser#**

Q1. For the model $Y_t = 5 + Y_{t-1} + e_t - 0.8e_{t-1} - 0.1e_{t-2}$, answer the following:
   a) Compute the mean $E[\nabla Y_t]$.
   b) Compute $Var[\nabla Y_t]$.

Q2. Consider two models (A) $Y_t = Y_{t-1} + e_t - 0.1e_{t-1}$ and (B) $Y_t = 0.9Y_{t-1} + 0.09Y_{t-2} + e_t$,
   a) Identify each model as a specific ARIMA model. (Hint: write what are the p, d, and q as well as the values of ϕ's and θ's.
   b) Compare models A and B. That is, how are they different and how are they similar? (Hint: Compare the first 5 π-weights and ψ-weights)

Form