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Class: ECON 20210 Assignment: 6

Problem 1a. *(T/F)* In order to generate persistence in business cycle fluctuations, we need to model a persistent process for productivity shock

Solution: **False**. A shock must be tempoary. □

Problem 1b. *(T/F)* The value function iteration algorithm for a stochastic model involves discretizing both the endogenous and exogenous state space and iterating on the value function for each grid on the state space.

Solution: **True**. This is a standard formulation of the value function iteration algorithm. □

Problem 1c. *(T/F)* Calculating correlation between raw data (e.g., real GDP vs consumption) would still give us a good sense of how the variables co-move along business cycle

Solution: **False**. This is because there is some noise within the data that must be removed before any proper analysis can be conducted. The noise being the clycial part of the data, which means that we have to use a filter like the HP filter to ensure that we conduct analysis only on the residual cylical data rather than entire data. □