E355 Engineering Economics Spring 2022
Classroom Assignment #7

"I pledge my honor that I have abided by the Stevens Honor System"

By: Alexander Gaskins, Daniel Goldberg, and Samuel Gavrilov

1) A financial expert has predicted 5% inflation during the next 4 years. How much will an item that currently costs $100, cost in 4 years. [2 points]

$$FV = P(1 + i)^N = 100(1 + 0.05)^4 = \$121.55$$

2) An annuity currently costs $25,000. It promises to pay $3,000 each year for the next 15 years. You want a real rate of return of 8% and inflation is estimated to average 3% per year. Should you buy the annuity? [4 points]

$$i = rate\ of\ return + rate\ of\ inflation = 8\% + 3\% = 11\%$$

$$PW_{Annuity} = A[\frac{1-(1+i)^{-N}}{i}] = 3000[\frac{1-(1+0.11)^{-15}}{0.11}] = \$21,572.61$$

The annuity should not be bought, as there is a loss on purchasing it. ($\$21,572.61 < \$25,000$)