Homework Check: FCM 12 p. 415 # 3, 6, 7, 9, 10, 13

Note: Present Value of an Annuity

The present value of an ordinary simple annuity is the principal value that must be invested today in order to accumulate the amount necessary in the time given to provide regular payments required. The formula is just a bit different from the amount formula as follows:

\[ PV = \frac{R \left[ 1 - (1 + i)^{-n} \right]}{i} \]

Where PV is the amount that must be invested today in order to provide the regular payments needed. The other variables are still used as before. For example,

Josie wants to be able to withdraw $1000 a month in her retirement in 25 years. How much will she need to invest today at 5% interest compounded monthly in order to accomplish this goal?

\[
\begin{align*}
0.05/12 &= 0.004166667 \\
n &= 25(12) = 300 \\
PV &= \frac{1000 \left[ 1 - (1 + 0.004166667)^{-300} \right]}{0.004166667} \\
PV &= $171060.05
\end{align*}
\]

Therefore, Josie must invest $171060.05 in order to retire in 25 years and withdraw $1000 a month.

Homework: FCM 12 p. 423 # 1, 2, 4, 6, 9, 11, 13