In-Class Exercise Solution

Here we have the FV of annuity, the length of the annuity, and the interest rate. We want to calculate the annuity payment. Using the FV equation: $\text{FV} = \text{C}\left\{\frac{[(1+r)^t - 1]}{\text{r}}\right\}$.

Here, we have: $\$90{,}000 = \text{C}\left\{\frac{[1.068^{10} - 1]}{0.068}\right\}$. We can now solve this equation for the annuity payment. Doing so, we get:

$\text{C} = \frac{\$90{,}000}{13.68662} = \$6{,}575.77.$

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This cash flow is a perpetuity.

To find the PV of a perpetuity, we use the equation:

$\text{PV} = \frac{\text{C}}{\text{r}} = \frac{\$25{,}000}{0.072} = \$347{,}222.22.$

In-Class Exercise Solution

This problem requires us to find the FV of annuity. The equation to find the FV is:

$$\text{FV} = \text{C}\left\{\frac{[(1+r)^t - 1]}{\text{r}}\right\} = \$300 \times \left\{\frac{\left[\left(1 + \left(\frac{0.10}{12}\right)\right)^{30\times 12} - 1\right]}{\left(\frac{0.10}{12}\right)}\right\} = \$678{,}146.38.$$