Problem Definition

Problem 41. Present Value: How much should be deposited in an account paying 7.2% interest compounded monthly in order to have a balance of $15,503.77 three years from now?

Solution Step 1:

The general formula for interest is

\[ P = \frac{A}{\left(1 + \frac{r}{n}\right)^{nt}} \]

Solution Step 2:

For the problem at hand we have \( A = 15,503.77 \), \( r = 0.072 \), \( n = 12 \), and \( t = 3 \). Substituting these into the present value formula gives

\[ P = \frac{15503.77}{\left(1 + \frac{0.072}{12}\right)^{(12)(3)}} = 12,500 \]

The amount that a person would need to invest now would be $12,500.