

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.