

F_{total} Want €50000, AER = 2.5%, Saving for 10 years
 (P) How much should I save at the start of each year?

We want P given
 Sum of future values
 = €50000

$$F = P(1+i)^t$$

$F_{total} =$

$$S_n = \frac{a(1-r^n)}{1-r}$$

$$t = 10 \text{ years}, i = 0.025 \Rightarrow 1+i = 1.025$$

$$\left. \begin{array}{l} F_1 = P(1.025)^{10} \\ + F_2 = P(1.025)^9 \\ + \vdots \\ + F_{10} = P(1.025)^1 \end{array} \right\} \text{Sum of series of future values.}$$

$$50000 = S_n$$

$$n = 10 \quad *a = P(1.025) \quad r = 1.025$$

$$50000 = \frac{P(1.025)(1-1.025^{10})}{1-1.025}$$

$$50000 = 11.483 P$$

$$P = \frac{50000}{11.483} \approx \text{€}4,354$$

AER 2.5%, 35 years Save an amount each month, want €60000 Pension.

$$\begin{array}{l} 2.5\% \text{ AER } i \\ = ? \text{ MER } r \end{array}$$

$$(1+i)^1 = (1+r)^{12}$$

$$r = \sqrt[12]{1+i} - 1$$

$$r = \sqrt[12]{1.025} - 1$$

$$35 \text{ years} = 35(12) \text{ months}$$