

Example:

Future Value of an Annuity

Future Value: $FV = R * ((1 + i)^n - 1)/i$
where P = annual payment, r = rate of interest, k= no. of periods per year.
 $R = P/k$, $i = r/k$ and $n = \text{no. of payments}$

3600	Annual Payment (\$)
4.8	Annual Rate of Interest (%)
12	Number of Periods per Year
25	Number of Years
<input type="button" value="Calculate!"/>	<input type="button" value="Clear"/>
173413.45	Future Value of Annuity (\$)

What is the total accumulation when one saves \$300/month (\$3,600 annually) for 25 years at the annual rate of interest of 4.8% compounded monthly? The accumulation is the future value of an annuity.

$$R = \frac{P}{k} = \frac{3600}{12} = 300$$
$$i = \frac{r}{k} = \frac{0.048}{12} = 0.004$$
$$FV = \frac{R[(1+i)^n - 1]}{i} = \frac{300[1.004^{300} - 1]}{0.004} = 173413.45$$

Note: $FV = R(1+i)^{n-1} + R(1+i)^{n-2} + \dots + R(1+i)^2 + R(1+i) + R$

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