Future Value Annuities

Annuity

 A series of payments or investments made at regular intervals. A **simple** annuity is an annuity in which payments coincide with the compounding period, or *conversion* period. An **ordinary** annuity is an annuity in which the payments are made at the end of each interval. We will only deal with simple, ordinary annuities.

Formula

$$FV = R \times \left(\frac{(1+i)^n - 1}{i} \right)$$

FV represents the future value of the annuity

R represents the regular payment made at each compounding period

i is the interest rate per compounding period, as a decimal

n is the total number of compounding periods

Example

You plan to put away $1000 per year in an annuity that earns 5% interest compounded annually for the next 5 years.

What will this annuity be worth in 5 years?

Example

You plan to invest $1,000 at the end of each 6-month period in an annuity that earns 4.8% interest compounded semi-annually for the next 20 years.

What will be the future value of your investment?

Example

You put away $500 every 3 months at 5.2% compounded quarterly. What will your investment be worth in 25 years?