**Compound interest:**

**Compound interest** is [interest](http://en.wikipedia.org/wiki/Interest) added to the [principal](http://en.wikipedia.org/wiki/Principal_sum) of a deposit or loan so that the added interest also earns interest from then on. This addition of interest to the principal is called *compounding*. A bank account, for example, may have its interest compounded every year: in this case, an account with $1000 initial principal and 20% interest per year would have a balance of $1200 at the end of the first year, $1440 at the end of the second year, $1728 at the end of the third year, and so on.

To define an interest rate fully, allowing comparisons with other interest rates, both the interest rate and the compounding frequency must be disclosed. Since most people prefer to think of rates as a yearly percentage, many governments require financial institutions to disclose the equivalent yearly compounded interest rate on deposits or advances. For instance, the yearly rate for a loan with 1% interest per month is approximately 12.68% per annum (1.0112 − 1). This equivalent yearly rate may be referred to as [*annual percentage rate*](http://en.wikipedia.org/wiki/Annual_percentage_rate) (APR), *annual equivalent rate* (AER), [*effective interest rate*](http://en.wikipedia.org/wiki/Effective_interest_rate), *effective annual rate*, and other terms. When a fee is charged up front to obtain a loan, APR usually counts that cost as well as the compound interest in converting to the equivalent rate. These government requirements assist consumers in comparing the actual costs of borrowing more easily.

For any given interest rate and compounding frequency, an equivalent rate for any different compounding frequency exists.

Compound interest may be contrasted with [simple interest](http://en.wikipedia.org/wiki/Simple_interest), where interest is not added to the principal (there is no compounding). Compound interest is standard in finance and economics, and simple interest is used infrequently (although certain financial products may contain elements of simple interest).

 FV = PV ( 1+i )^n\, 