

The rule of 72

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The rule of 72 is a simple way of estimating the amount of time it takes to double your money.

You simply divide 72 by the rate of appreciation and you have the approximate number of years it takes to double your money. For example at a 10% rate of appreciation it takes about 7.2 years to double your money, and at 5% it takes $72/5 = 14.4$ years. At a 30% appreciation rate you double your money every 2.4 years.

At the same time you can use the formula the other way, to double your money every 5 years you need an interest rate of 14.4%.

The "proper" formula for calculating gains is $(1+i)^n$ where i is the interest rate (as a decimal, ie $30\%/100 = 0.3$) and n is the number of years. A 7% interest rate over 5 years leads to a gain of $(1+0.07)^5 = 1.4$, ie a 40% increase. To set a profit target for your money use the rearrangement of the formula: $1+i = \text{nth root of gain}$, so to quadruple your money in 3 years means taking the cube root of four and subtracting one, ie $\sqrt[3]{4} - 1 = 0.58$, you would need a gain of 58% a year compound.

Applying this to a rule of 72 problem just to check, the rule of 72 says that it takes 8 years to double your money at 9%. $(1+0.09)^8 = 1.99$. Pretty close, which shows that the rule of 72 is a very good quick calculator, but not an exact solution.