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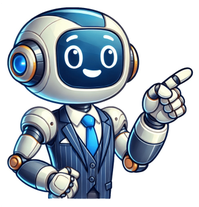

The amortization calculator or loan amortization calculator is a handy tool that not only helps you to compute the payment of any amortized loan, but also gives you a detailed picture of the loan in question through its amortization schedule. The main strength of this calculator is its high functionality, that is, you can choose between different compounding frequencies (including continuous compounding), and payment frequencies You can even set an extra payment.You can also study the loan amortization schedule on a monthly and yearly bases, and follow the progression of the balances of the loan in a dynamic amortization chart. If you read on, you can learn what the amortization definition is, as well as the amortization formula, with relevant details on this topic. For these reasons, if you would like to get familiar with the mechanism of loan amortization or would like to analyze a loan offer in different scenarios, this tool will be of excellent help.If you are more interested in other types of repayment schedule, you may check out our loan repayment calculator, where you can choose balloon payment or an even principal payment options as well. In case you would like to compare different loans, you may make good use of the APR calculator as well.The repayment of most loans is realized by a series of even payments made on a regular basis. The popular term in finance to describe loans with such a repayment schedule is an amortized loan. Accordingly, we may phrase the amortization definition as "a loan paid off by equal periodic installments over a specified term". Typically, the details of the repayment schedule are summarized in the amortization schedule, which shows how the payment is divided between the interest (computed on the outstanding balance) and the principal payment. The amortization chart might also represent the unpaid balance at the end of each period. A few examples of loan amortization are automobile loans, home mortgage loans, student loans, and many business loans.As in general the core concept that governs financial instruments is the time value of money, the loan amortization is similarly strongly connected to the present value and future value of money. More specifically, there is a concept called the present value of annuity that conforms the most to the loan amortization framework.To see why, let's consider the following simple example. Suppose you borrow $1,000, which you need to repay in five equal parts due at the end of every year (the amortization term is five years with a yearly payment frequency). The lender charges you 12 percent interest, that is calculated on the outstanding balance at the beginning of each year (therefore, the compounding frequency is yearly).The illustration below represents the timeline of this example, where PMT is the yearly payment or installment. To find PMT, we need to find a value such that the sum of their present values equals the loan amount: $1,000.The solution of this equation involves complex mathematics (you may check out the IRR calculator for more on its background); so, it's easier to rely on our amortization calculator. After setting the parameters according to the above example, we get the result for the periodic payment, which is $277.41.The specific feature of amortized loans is that each payment is the combination of two parts: the repayment of principal and the interest on the remaining principle . The amortization chart below, which appears in the calculator as well, represents the payment schedule of the previous example. As you can see, the interest payments are typically high in early periods and decrease over time, while the reverse is true for the principal payments. The lowering interest amount is matched by the increasing amount of principal so that the total loan payment remains the same over the loan term.The large unpaid principal balance at the beginning of the loan term means that most of the total payment is interest, with a smaller portion of the principal being paid. Since the principal amount being paid off is comparably low at the beginning of the loan term, the unpaid balance of the loan decreases slowly. As the loan payoff proceeds, the unpaid balance declines, which gradually reduces the interest obligations, making more room for a higher principal repayment. Logically, the higher the weight of the principal part in the periodic payment, the higher the rate of decline in the unpaid balance.It may be easier to understand this concept if it is displayed as a graph of the relevant balances, which is why this option is also displayed in the calculator.An amortization schedule shows the structure of these consecutive payments: the interest paid, the principal repaid, and the unpaid balance at the end of each period, which must reach zero during the amortization term. As you have now gained some insight into the logic behind the amortized loan structure, in this section you can learn two basic formulas employed in our amortization calculator:Monthly repayment formulaP=Ai(1+i)tP = \frac{A \times i}{1-(1 + i)^{-t}}P=1(1+i)tAiB=A(1+i)tPi((1+i)t1)B = A \times (1 + i)^t - \frac{P}{i} \times ((1 + i)^t - 1)B=A(1+i)tiP((1+i)t1)WherePPP - monthly payment amountAAA - loan repayment amountiii - periodic interest ratettt - number of periodsBBB - unpaid balanceFor more details and formulas, you may check BrownMath.com, where you can also check the precise derivation of the related equations.It is worth knowing that the amortization term doesn't necessarily equal to the original loan term; that is, you may pay off the principal faster than the time estimated with the periodic payments based on the initial amortization term. An obvious way to shorten the amortization term is to decrease the unpaid principal balance faster than set out in the original repayment plan. You may do so by a lump sum advance payment, or by increasing the periodic installments.In this calculator, you can set an extra payment, which raises the regular payment amount. The power of such an extra payment is that its amount is directly allocated to the repayment of the loan principal, thus the principal balance decreases in an exceedingly lower total interest burden.The beneficial effect of extra payments is especially profound when the initial loan term is relatively long, such as most mortgage loans. You can follow and compare the progress of new balances with the original plan or the dynamic chart, and the amortization schedule with extra payment.Since the shorter repayment period with advance payments mean lower interest earnings to the banks, lenders often try to avert such action with additional fees or penalties. For this reason, it is always advisable to negotiate with the lender when altering the contractual payment amount.The results of this calculator, due to rounding, should be considered as just a close approximation financially. For this reason, and also because of possible shortcomings, the calculator is created for instructional purposes only. An amortization calculator computes your loan payments and shows you how they are spread across the term of your loan. By entering simple details like the loan amount, interest rate, and loan term, the calculator generates an amortization schedule. This schedule outlines every payment you will makemonth by month or year by yearincluding the portions that go toward reducing the loan balance and the interest charged by the lender.This transparency is invaluable because many borrowers dont realize how much of their monthly payment initially goes toward interest rather than principal. Using our calculator, youll understand exactly how your loan amortizes, helping you plan your finances better. While this calculator handles general amortization needs, we also offer more specific tools for different financial situations:What Is Amortization?Amortization has two common meanings depending on the context. In finance, it refers to paying off a loan gradually over time through scheduled payments. In business accounting, amortization involves distributing the cost of long-term assets across multiple accounting periods. Both are explained in more detail below.Loan Amortization, Explained:When you take out a loan such as a mortgage, auto loan, or personal loanyou typically repay it in regular installments. Each of these monthly payments includes both principal (the original amount borrowed) and interest (what you pay to the lender for borrowing the money). At the beginning of the loan term, a larger portion of your payment goes toward interest. Over time, as the principal decreases, more of your payment is applied toward reducing the balance. This structured repayment system is known as amortization. You can visualize this process using an amortization schedule, which outlines how your payments are applied throughout the loan term and helps you track:How much of each payment goes toward principal vs. interestYour remaining loan balance after each paymentThe total interest paid over the life of the loanNon-Amortized LoansIts important to note that not all loans are amortized. Revolving credit, like credit cards, allows you to carry a balance and vary your payments. Other non-amortized loan types include:Interest-only loans where you pay just the interest for a set periodBalloon loans where a large principal payment is due at the endFor planning revolving credit, check out our Credit Card Calculator or Credit Card Payoff Calculator.What Is an Amortization Schedule?An amortization schedule, also known as an amortization table, outlines each loan payment and how it is divided between interest and principal. It also shows the remaining balance after each payment.When you use our calculator, it automatically generates both monthly and yearly amortization schedules to help you visualize your repayment timeline.Key features of amortization schedules:Track how much of each payment goes toward interest vs. principal.Monitor the remaining loan balance over time.Understand the cumulative interest paid.Note: Standard amortization tables assume a fixed interest rate and dont typically factor in extra payments, fees, or changes in rate. For loans with variable rates or flexible terms, the table may not fully reflect your real-world costs.Amortization in Accounting: Spreading Costs Over TimeOutside personal finance, amortization also refers to a key accounting principlespreading the cost of intangible assets over time. Businesses often acquire long-term intangible assets such as:Patents, copyrights, and trademarksLicenses and permitsCustomer lists and brand goodwillBusiness processes and proprietary systemsRather than recording these large costs all at once, businesses amortize them over their useful life to present a more accurate financial picture.IRS and Tax ImplicationsUnder IRS Section 197, many intangible assets can be amortized over a standard 15-year period. However, some assets dont qualify, such as:Business interests or landContracts and leasesMost self-developed computer softwareNon-acquired goodwill or brand recognitionStartup Cost AmortizationIf youre launching a new business, certain startup expenses may also be amortized. Eligible costs include:Legal or consulting feesMarket research and analysisPre-launch advertisingEmployee training or recruitmentTo qualify, these expenses must occur before your business officially begins operations. The IRS allows these costs to be amortized over 15 years if specific conditions are met.Real-World Examples1. First-Time Homebuyer:Jessica is purchasing her first home with a $300,000 mortgage at a 5% interest rate over 30 years. She wants to see how much shell pay each month and how long it will take to significantly reduce the loan balance. With our calculator, she sees that early payments go mostly toward interest. By exploring the amortization table, she learns that making extra principal payments early can dramatically reduce her total interest.2. Small Business Owner:Carlos owns a coffee shop and takes out a $50,000 business loan for renovations, payable over 5 years. Using the calculator, he tracks his monthly obligations and sees how the debt will be retired over time. He also examines how increasing monthly payments would help him save on interest and pay off the loan faster.Start Calculating TodayUnderstanding amortization is the first step toward smarter financial planning. Try our Amortization Calculator now and take the guesswork out of loan repayment. Explore your options, track your payments, and make decisions that save money over time. home / financial / amortization calculator 66%34%PrincipalInterest Year5%$50K$100K$150K$200K$250K$300K05101518balanceinterestPayment While the Amortization Calculator can serve as a basic tool for most, if not all, amortization calculations, there are other calculators available on this website that are more specifically geared for common amortization calculations. What is Amortization? There are two general definitions of amortization. The first is the systematic repayment of a loan over time. The second is used in the context of business accounting and is the act of spreading the cost of an expensive and long-lived item over many periods. The two are explained in more detail in the sections below. Paying Off a Loan Over Time When a borrower takes out a mortgage, car loan, or personal loan, they usually make monthly payments to the lender; these are some of the most common uses of amortization. A part of the payment covers the interest due on the loan, and the remainder of the payment goes toward reducing the principal amount owed. Interest is computed on the current amount owed and thus will become progressively smaller as the principal decreases. It is possible to see this in action on the amortization table. Credit cards, on the other hand, are generally not amortized. They are an example of revolving debt, where the outstanding balance can be carried month-to-month, and the amount repaid each month can be varied. Please use our Credit Card Calculator for more information or to do calculations involving credit cards, or our Credit Cards Payoff Calculator to schedule a financially feasible way to pay off multiple credit cards. Examples of other loans that aren't amortized include interest-only loans and balloon loans. The former includes an interest-only period of payment, and the latter has a large principal payment at loan maturity. Amortization Schedule An amortization schedule (sometimes called an amortization table) is a table detailing each periodic payment on an amortizing loan. Each calculation done by the calculator will also come with an annual and monthly amortization schedule above. Each repayment for an amortized loan will contain both an interest payment and payment towards the principal balance, which varies for each pay period. An amortization schedule helps indicate the specific amount that will be paid towards each, along with the interest and principal paid to date, and the remaining principal balance after each pay period. Basic amortization schedules do not account for extra payments, but this doesn't mean that borrowers can't pay extra towards their loans. Also, amortization schedules generally do not consider fees (e.g. origination, late payment, etc.) or changes in rate, for loans with variable rates or flexible terms. Contracts for the use of or term interests in any items on this list Some intangible assets, including customer bases and relationships with customers Supplier-based intangibles, including the value of future purchases due to existing relationships with vendors Licenses, permits, or other rights granted by governmental units or agencies (including issuances and renewals) Covenants not to compete or non-compete agreements entered relating to acquisitions of interests in trades or businesses Franchises, trademarks, or trade names