 **Compound Interest (A)**  
Formula: A=P(1+rn)ntA = P \left(1 + \frac{r}{n}\right)^{nt}A=P(1+nr​)nt  
**Summary**: Calculates the total amount AAA after interest is applied, where PPP is the principal, rrr is the annual interest rate, nnn is the number of times interest is compounded per year, and ttt is the number of years.

 **Future Value of an Annuity (FVA)**  
Formula: FVA=P×(1+r)n−1rFVA = P \times \frac{(1 + r)^n - 1}{r}FVA=P×r(1+r)n−1​  
**Summary**: Computes the future value of a series of equal payments PPP made at regular intervals, where rrr is the interest rate per period and nnn is the number of payments.

 **Present Value of an Annuity (PVA)**  
Formula: PVA=P×1−(1+r)−nrPVA = P \times \frac{1 - (1 + r)^{-n}}{r}PVA=P×r1−(1+r)−n​  
**Summary**: Determines the present value of a series of future payments PPP discounted back to the present at a rate rrr over nnn periods.

 **Net Present Value (NPV)**  
Formula: NPV=∑t=0nCt(1+r)tNPV = \sum\_{t=0}^{n} \frac{C\_t}{(1 + r)^t}NPV=∑t=0n​(1+r)tCt​​  
**Summary**: Calculates the current value of a series of cash flows CtC\_tCt​ over time, discounted at a rate rrr.

 **Internal Rate of Return (IRR)**  
Formula: 0=NPV=∑t=0nCt(1+IRR)t0 = NPV = \sum\_{t=0}^{n} \frac{C\_t}{(1 + IRR)^t}0=NPV=∑t=0n​(1+IRR)tCt​​  
**Summary**: The discount rate that makes the NPV of all cash flows from a project equal to zero.

 **Loan Amortization**  
Formula: M=P×r(1+r)n(1+r)n−1M = P \times \frac{r(1 + r)^n}{(1 + r)^n - 1}M=P×(1+r)n−1r(1+r)n​  
**Summary**: Calculates the monthly payment MMM required to fully amortize a loan PPP over nnn periods at interest rate rrr.

 **Debt-to-Income Ratio (DTI)**  
Formula: DTI=TotalMonthlyDebtGrossMonthlyIncome×100DTI = \frac{Total Monthly Debt}{Gross Monthly Income} \times 100DTI=GrossMonthlyIncomeTotalMonthlyDebt​×100  
**Summary**: Measures the percentage of a borrower’s income that goes towards servicing debt.

 **Cash Flow Projection**  
Formula: CashFlow=CashInflows−CashOutflowsCash Flow = Cash Inflows - Cash OutflowsCashFlow=CashInflows−CashOutflows  
**Summary**: A forecast of cash flows that assesses how much cash a business expects to generate and spend over a period.

 **Risk-Adjusted Return**  
Formula: RAR=R−RfσRAR = \frac{R - R\_f}{\sigma}RAR=σR−Rf​​  
**Summary**: Evaluates the return of an investment relative to its risk, where RRR is the return, RfR\_fRf​ is the risk-free rate, and σ\sigmaσ is the standard deviation of returns.

 **Return on Investment (ROI)**  
Formula: ROI=NetProfitCostofInvestment×100ROI = \frac{Net Profit}{Cost of Investment} \times 100ROI=CostofInvestmentNetProfit​×100  
**Summary**: Measures the profitability of an investment by comparing the net profit to the initial cost.

 **Weighted Average Cost of Capital (WACC)**  
Formula: WACC=EV×Re+DV×Rd×(1−T)WACC = \frac{E}{V} \times Re + \frac{D}{V} \times Rd \times (1 - T)WACC=VE​×Re+VD​×Rd×(1−T)  
**Summary**: Represents a firm’s average cost of capital from all sources, weighted by their respective proportions.

 **Break-even Point (BEP)**  
Formula: BEP=FixedCostsSellingPrice−VariableCostBEP = \frac{Fixed Costs}{Selling Price - Variable Cost}BEP=SellingPrice−VariableCostFixedCosts​  
**Summary**: Determines the level of sales at which total revenues equal total costs, resulting in zero profit.

 **Economic Value Added (EVA)**  
Formula: EVA=NOPAT−(Capital×CostofCapital)EVA = NOPAT - (Capital \times Cost of Capital)EVA=NOPAT−(Capital×CostofCapital)  
**Summary**: Measures a company's financial performance based on the residual wealth calculated by deducting the cost of capital from operating profit.

 **Sharpe Ratio**  
Formula: Sharpe=Rp−RfσpSharpe = \frac{R\_p - R\_f}{\sigma\_p}Sharpe=σp​Rp​−Rf​​  
**Summary**: Assesses the performance of an investment compared to a risk-free asset, adjusting for its risk.

 **Profit Margin**  
Formula: ProfitMargin=NetIncomeRevenue×100Profit Margin = \frac{Net Income}{Revenue} \times 100ProfitMargin=RevenueNetIncome​×100  
**Summary**: Indicates how much profit a company makes for every dollar of revenue.

 **Capital Asset Pricing Model (CAPM)**  
Formula: E(R)=Rf+β(E(Rm)−Rf)E(R) = R\_f + \beta (E(R\_m) - R\_f)E(R)=Rf​+β(E(Rm​)−Rf​)  
**Summary**: Estimates the expected return of an asset based on its systemic risk as measured by beta.

 **Inventory Turnover Ratio**  
Formula: ITR=CostofGoodsSoldAverageInventoryITR = \frac{Cost of Goods Sold}{Average Inventory}ITR=AverageInventoryCostofGoodsSold​  
**Summary**: Measures how many times a company’s inventory is sold and replaced over a period.

 **Current Ratio**  
Formula: CurrentRatio=CurrentAssetsCurrentLiabilitiesCurrent Ratio = \frac{Current Assets}{Current Liabilities}CurrentRatio=CurrentLiabilitiesCurrentAssets​  
**Summary**: Evaluates a company's ability to pay short-term obligations with short-term assets.

 **Quick Ratio (Acid Test)**  
Formula: QuickRatio=CurrentAssets−InventoryCurrentLiabilitiesQuick Ratio = \frac{Current Assets - Inventory}{Current Liabilities}QuickRatio=CurrentLiabilitiesCurrentAssets−Inventory​  
**Summary**: A more stringent measure than the current ratio that excludes inventory from current assets.

 **Return on Equity (ROE)**  
Formula: ROE=NetIncomeShareholder′sEquity×100ROE = \frac{Net Income}{Shareholder's Equity} \times 100ROE=Shareholder′sEquityNetIncome​×100  
**Summary**: Measures the profitability of a corporation in relation to shareholder's equity.

 **Leverage Ratio**  
Formula: LeverageRatio=TotalDebtTotalAssetsLeverage Ratio = \frac{Total Debt}{Total Assets}LeverageRatio=TotalAssetsTotalDebt​  
**Summary**: Assesses the proportion of a company’s assets financed through debt.

 **Gross Profit Margin**  
Formula: GrossProfitMargin=GrossProfitRevenue×100Gross Profit Margin = \frac{Gross Profit}{Revenue} \times 100GrossProfitMargin=RevenueGrossProfit​×100  
**Summary**: Measures the efficiency of a company in managing its production costs relative to its sales revenue.

 **Yield to Maturity (YTM)**  
Formula: YTM=C+F−PnF+P2YTM = \frac{C + \frac{F - P}{n}}{\frac{F + P}{2}}YTM=2F+P​C+nF−P​​  
**Summary**: Calculates the total return anticipated on a bond if held until it matures.

 **Expense Ratio**  
Formula: ExpenseRatio=TotalExpensesTotalAssets×100Expense Ratio = \frac{Total Expenses}{Total Assets} \times 100ExpenseRatio=TotalAssetsTotalExpenses​×100  
**Summary**: Represents the costs associated with managing an investment fund, expressed as a percentage of total assets.

 **Price to Earnings Ratio (P/E)**  
Formula: P/E=MarketValueperShareEarningsperShareP/E = \frac{Market Value per Share}{Earnings per Share}P/E=EarningsperShareMarketValueperShare​  
**Summary**: Evaluates the relative value of a company's shares compared to its earnings.

 **Effective Annual Rate (EAR)**  
Formula: EAR=(1+in)n−1EAR = (1 + \frac{i}{n})^n - 1EAR=(1+ni​)n−1  
**Summary**: Calculates the interest rate on an investment or loan that is compounded over a period of time.

 **Annual Percentage Rate (APR)**  
Formula: APR=Fees+InterestLoanAmount×365DaysinLoanTermAPR = \frac{Fees + Interest}{Loan Amount} \times \frac{365}{Days in Loan Term}APR=LoanAmountFees+Interest​×DaysinLoanTerm365​  
**Summary**: Represents the annualized cost of borrowing or the annual return on an investment.

 **Return on Assets (ROA)**  
Formula: ROA=NetIncomeTotalAssets×100ROA = \frac{Net Income}{Total Assets} \times 100ROA=TotalAssetsNetIncome​×100  
**Summary**: Indicates how efficient a company is at using its assets to generate profit.

 **Time-weighted Rate of Return (TWRR)**  
Formula: TWRR=∏t=1n(1+Rt)−1TWRR = \prod\_{t=1}^{n} (1 + R\_t) - 1TWRR=∏t=1n​(1+Rt​)−1  
**Summary**: Measures the compound growth rate of an investment portfolio, ignoring the impact of cash inflows and outflows.

 **Modified Duration**  
Formula: ModD=D1+ymModD = \frac{D}{1 + \frac{y}{m}}ModD=1+my​D​  
**Summary**: Measures the sensitivity of the price of a bond to interest rate changes, accounting for the yield.