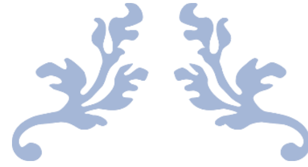

FINANCIAL & ACCOUNTING MATH TOOLS

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1. **Define and discuss: Financial Accounting Math Tools**

1.1 Define Financial Accounting Math Tools

What are financial accounting tools?

Financial Accounting tools are instruments and software applications used to measure (record, manage, analyze) financial transactions and data.

These accounting tools help businesses maintain or account to accurate financial records, ensure regulatory compliance, and make informed financial decisions.

These financial accounting tools include,

1. Accounting software
2. General Ledger
3. Financial statements
4. Budgeting and forecasting
5. Payroll management systems
6. Tax preparation software
7. Enterprise Resource Planning (ERP)
8. Expense management tools
9. Financial Analysis software
10. Audit tools

These accounting tools document, analyze and report every transaction of a business, in order to determine the financial health and stability of the business or organization. (C.P. Stickney, 2009)

1.2 Discuss Financial Accounting Math Tools

What are these accounting tools and how can they be practiced?

1. **Accounting Software-** Some accounting applications are QuickBooks, Xero and FreshBooks. These applications automatically record and report Financial transactions, making it easier and more convenient to manage accounts and payrolls and other Financial operations.

2. **General Ledger (GL)-** A General Ledger is a comprehensive record of a company's financial transaction. Preparation of Financial statements of a company entirely depends on the General Ledger as it tracks assets, liabilities, revenues, expenses and equity. It is the most important book to account for any financial transaction.

3. **Financial Statements-** Financial statements are written records that communicate the business activities. Balance sheets, Income statements and cash flow statement are the documents that give an insight to the company's financial health.

4. **Budgeting and forecasting tools-** Tools and apps like Cube that are used to create budgets financial forecast. In my simple understanding, these are tools that help business try to predict the future concerning finance. And so, these tools help businesses plan for future financial performance and allocate resources effectively.

5. **Payroll management system-** Tools such as ADP, Paychex and Gusto, streamline the payroll process ensuring employees are paid accurately and on time. They also ensure tax regulations are maintained.

6. **Tax preparation Software-** Similar to payroll management systems, these tools such as TurboTax and HR Block, assist business in preparing and filling their taxes, ensuring tax regulations and tax laws and maintained.

7. **Enterprise Resource Planning (ERP)-** Comprehensive software solutions like SAP, Oracle, and Microsoft Dynamics integrate various business processes, including financial management, to provide and unified view of operations.

8. **Expense Management tools-** Expensify and Concur help businesses track and manage employee expenses, streamline reimbursement processes and ensure policy compliance.

9. **Financial Analysis software-** These tools such as Tableau and Microsoft Power BI enables businesses to analyze financial data, generate insights, and create visualization to support decision-making.

10. **Audit Tools-** ACL and Caseware facilitate the auditing process by helping auditors review financial records, identify discrepancies, and ensure compliance with accounting standards.

All the above accounting tools are vital to the health and stability of a growing company or a fully established business house.

When discussing about finance, these tools are what the accountant must use to make his/her work easier and more comprehensive. The right tools for the job matter just as a carpenter cannot build a house without his/her tools, an accountant cannot "account" to the financial responsibilities bestowed upon him/her. Thus, it is very important for practicing

accountants to understand and utilize these accounting tools to fully ensure that the Job is done right and accurately. Mistakes by accountants may cost businesses a large sum of money to recover or in a worst-case scenario a possible collapse of the business and jail time for the accountant.

Accountants play a crucial role in an organization. Ensuring they are properly armed with the accounting tools; in turn they ensure the health and stability of the business. (J. J Weygandt, 2020)

2. Define and discuss: Financial Accounting – 5 pages report

2.1 Define financial accounting

The process of documenting, compiling, and reporting transactions and revenue-expense generation during a certain time period is known as financial accounting. Before expressing interest in partnering with the business, for instance, sponsors or investors must confirm an account statement.

According to the lesson in brief, financial accounting is the process of summarizing, analyzing, and reporting financial transactions for firms, as well as creating financial statements for public consumption. It is controlled by both local and international accounting standards, with GAAP serving as the basic framework for rules throughout all jurisdictions. IFRS, released by the International Accounting Standards (IASs), is a set of international accounting standards that specify how transactions and events should be recorded in financial statements. As IFRS became more widely used, financial reporting uniformity across worldwide firms increased. Financial accounting creates accounting information for outside parties, whereas management accounting helps business executives make decisions.

2.2 Discuss financial accounting

Financial accounting is a key component in the modern-day businesses. It is a crucial part of every organization. It is essential for transparency and decision making in businesses.

Financial accounting or Financial reporting aims to accomplish 2 main objectives,

- To provide accurate and updated financial information to existing and potential investors, lenders and other creditors in making decisions about providing resources to the entity.
- Secondly according to the European Accounting Association "Capital maintenance is a competing objective of financial reporting"

Objectives of Financial Accounting

1. **Capital Maintenance**

   "Capital Maintenance is the concept that ensures a company's capital or equity remains intact over a period."

   Capital Maintenance can be further divided into Financial Capital Maintenance and Physical Capital Maintenance.

   Financial Capital Maintenance focuses on maintaining the financial value of the capital. Whereas the Physical Capital Maintenance focuses on maintaining the physical productive capacity of the company.

2. **Systematic recording of transactions**
   The basic object of accounting is to record the financial aspects of business transactions such as book keeping. These financial records are then used in the preparation of Financial statements.

What makes Financial Accounting?

Financial accounting is made up by these following qualities,

- Relevance- accounting which is decision-specific. It must be possible for accounting information to influence decisions. Unless this characteristic is present, there is no point in cluttering statements.

- Materiality - information is material if its omission or misstatement could influence the economic decisions of users taken on the basis of the financial statements.

- Reliability - accounting must be free from significant error or bias. It should be capable to be relied upon by managers. Often information that is highly relevant isn't very reliable, and vice-versa

- Understandability -accounting reports should be expressed as clearly as possible and should be understood by those at whom the information is aimed.

- Comparability- financial reports from different periods should be comparable with one another in order to derive meaningful conclusions about the trends in an entity's financial performance and position over time. Comparability can be ensured by applying the same accounting policies over time

All these qualities must be present in Financial accounting for it to be identified as Financial account. Reports must be Understood, relevant, Reliable, and comparable to other financial performance.

Financial accounting as discussed and shown is the cornerstone of modern-day businesses and organizations. It is a key component is transparency and decision making. It is essential for the health and well being of businesses and organizations. (J. J Weygandt, 2020)

3. Define and discuss: Accounting Methods

3.1 Define accounting methods

Accounting methods refer to the principles and procedures used by companies to record and report financial transactions. These methods ensure that financial statements are accurate, consistent and in compliance with regulatory standards.

There are several accounting methods each with its own pros and cons. However the primary accounting methods are accrual accounting and cash accounting.

3.2 Discuss accounting methods

3.2.1 Accrual Accounting

Accrual Accounting records revenues and expenses when they are earned or incurred, regardless of when the cash is actually received or paid. A company's accurate financial position and performance is better illustrated using the Accrual accounting method.

Key Features

- Revenue Recognition Principle

  Revenue is recognized when earned and not only when received. Example a company car parts, and a customer wants a certain part. The company has to back order. The customer has to make full payment even though he has to wait for 1 month for the spare part to arrive.

- Matching Principle

  Although Paton and Littleton first proposed the principle of matching in accounting in 1940, it was already embedded in practice. Accounting prior to 1940 concentrated on both conventional methods and fresh ideas. The first attempt to create a logical, well-coordinated, and consistent body of doctrine for a competent accounting organization was made by Paton and Littleton. The idea of charging revenues for expenditures that

are logically related to the product—that is, connecting cost with revenue—was introduced. The matching idea was approved by the American Accounting Association in 1941 and has since been widely acceptance as an established criterion to evaluate accounting methods in the United States and the United Kingdom.

The matching concept arose from inductive reasoning and is essentially a rationalization of cost allocation. It was commonly used by accountants and accepted by management. Costs are tracked from the initial acquisition of products or services through several regroupings to provide information about relevant costs for a certain revenue segment. These costs are technically or economically related to a specific product segment or unit of time. (Liao, 1979)

3.2.2 Cash Accounting

Cash accounting is a simple accounting system that is widely utilised by small firms. Cash accounting only records transactions that involve the spending or receiving of cash. In cash accounting, a sale is recorded when the payment is received, whereas an expense is recorded only when the bill is paid. The cash accounting system is, of course, what most people use to manage their personal accounts, and it is suitable for businesses of a certain size.

If a business's average annual gross earnings for the previous three years exceed $25 million, it has to implement the accrual method, according to Internal Revenue Service regulations. (Department of the Treasury, 2022)

4. Define and discuss: Accounting Regulations

4.1 Define accounting regulations

Accounting regulations refer to the rules and standards set by governing bodies to ensure the consistency, transparency, and integrity of financial reporting by organizations. These regulations are designed to protect the interests of stakeholders, investors, creditors, and the public by providing a reliable framework for financial disclosures. (C. T Horngren, 2019)

4.2 Discuss accounting regulations

Key Aspects of accounting regulations

1. Standardizations: Accounting regulations provide a standardized approach to financial reporting, ensuring that financial statements are comparable across different organizations and time periods.
2. Transparency: Regulations promote transparency by requiring companies to disclose relevant financial information in a clear and consistent manner.
3. Accountability: They hold organizations accountable for their financial practice, reducing the risk of fraud and financial misstatements.
4. Compliance: Companies must adhere to these regulations to comply with legal and regulatory requirements, avoiding penalties and legal issues.

5. Investor Protections: By ensuring accurate and reliable financial reporting, accounting regulations protect investors and their stockholders from false or inaccurate information

Accounting Regulatory Bodies

The purpose of the financial accounting standards board (FASB) is to establish and improve US GAAP. There are also auditing standards, enforced by the Public company accounting oversight board (PCAOB), and required by the SEC. The purpose of the PCAOB is to protect the public interest in the preparation of audit reports. The FASB and PCAOB are responsible for the oversight of all United States accounting. Internationally, the IFRS foundation and the International Accounting Standards Board (IASB) oversee international accounting.

1. FINANCIAL ACCOUNTING STANDARDS BOARD(FASB)
   - The FASB is responsible for establishing accounting and financial reporting standards for companies and non-profit organizations in the United States.
   - It issues the Generally Accepted Accounting Principle (GAAP).
2. INTERNATIONAL ACCOUNTING STANDARDS BOARD (IASB)
   - The IASB develops and approves the International Financial Reporting Standards (IFRS), used by many countries around the world.
   - IFRS aims to bring global consistency and comparability in financial reporting.
3. SECURITIES AND EXCHANGE COMMISON(SEC)
   - The SEC regulates the securities industry in the united states, enforcing the compliance of financial reporting standards among publicly traded companies.
   - It ensures that financial disclosures are accurate and complete.
4. PUBIC COMPANY ACCOUNTING OVERSIGHT BOARD (PCAOB)
   - The PCAOB oversees the audits of public companies to protect the interest of investors and further the public interest in preparation of informative, accurate and independent audit reports.

KEY ACCOUNTING REGULATIONS

1. GENERALLY ACCEPTED ACCOUNTING PRINCIPLE(GAAP)
   - GAAP is a set of accounting standards and principles used in the United states for financial reporting.
   - It includes guidelines on how to recognize, measure, present and disclose financial information.
2. INTERNATIONAL FINANCIAL REPORTING STANDARDS(IFRS)
   - IFRS provide a global framework for financial reporting, ensuring that financial statements are consistent, comparable and transparent across different countries.
   - It covers various aspects of accounting, including revenue regulations, financial instruments, leases and employment benefits.

3. SARBANES-OXLEY ACT (SOX)
    - Enacted in 2002 in response to corporate scandals, SOX aims to enhance corporate responsibility and financial disclosures and combat corporate and accounting fraud.

It establishes stricter regulatory requirements for all publicly traded companies in the united states.

Accounting regulations play a crucial role in maintaining the integrity, transparency, and reliable financial reporting. These regulations protect the interests of Investors, creditors, regulators and the public, ensuring a stable and transparent financial environment. (J. J Weygandt, 2020)

5. Define and discuss: Management Accounting Tools

5.1 Define management accounting tools

Management accounting tools are methods, techniques and software used by a manager to make informed business decisions.

Similar to accounting tools, Management accounting tools help a manager manage business operations by providing detailed financial and non-financial information. These tools and method are, budgeting, Variance analysis, Cost-Volume Profit (CVP) analysis, Activity-Based Costing, Balanced Scorecard, Standard Costing, Job Costing, Process costing, Financial Ratio analysis, and Forecasting. (R.H Garrison, 2020)

5.2 Discuss management accounting tools

BUDGETING

- Budgeting involves creating a financial plan for a specific period, outlining projected revenues, expenses and capital allocations
- Budgeting helps in resources allocation, cost control, and financial planning.
- The types of budgeting methods include, Operating budget, capital budgets and cash budget.

VARIANCE ANALYSIS

- Variance analysis is the process of comparing financial performance with budgeted or planned figures to identify differences(variances)
- It helps in understanding the reasons for deviations and taking corrective actions.
- Variance analysis include revenue variance, cost variance and profit variance.

COST VOLUME PROFIT ANALYSIS (CVP)

- CVP processes how changes in cost and volume affect a company’s operating income and net income.
- It assists in decision making regarding pricing, product mix and cost control.

- CVP includes break-even analysis, contribution margin and margin of safety.

ACTIVITY BASED COSTING(ABC)

- Activity based costing overhead costs to products or service-based activities required to produce them.
- It provides more accurate cost information, leading to better pricing and product mix decisions
- These include, Cost drivers, activity rates and overhead allocations.

BALANCED SCORECARD

- Balanced Scorecard is a strategic planning and management system that uses a mix of financial and non- financial performance metric.
- It aligns business activities to the vision and strategy of the organization, improves internal and external communications and monitors performance against strategic goals.
- Examples include, financial, customer, internal business processes and learning and growth.

STANDARD COSTING

- Standard costings involve assigning standard costs rather than actual costs to cost objects like products and services.
- It simplifies costing, helps in budgeting and variance analysis.
- They include, Standard materials costs, labor costs and overhead costs.

JOB COSTING

- Job costing tracks costing associated with a specific job or project.
- It helps determine the profitability of individual jobs and managing project costs.
- Such costing includes, direct materials, direct labor, and applied overhead.

PROCESS COSTING

- Process costing is a method used where products are produced continuously over a period, costing is assigned by process.
- It is suitable for manufacturing industries where products are indistinguishable from each other.
- These include, Unit costs, equivalent cost and cost allocations.

FINANCIAL RATION ANALYSIS

- Financial ratio analysis uses ratio derived from financial statements to evaluate a company's performance.

- It assists in comparing performance over time and against industry benchmarks.
- Examples of these include, Liquidity ratios, profitability ratios, leverage ratios and effective ratios.

FORECASTING

- Forecasting predicts future financial outcomes based on historical data, trends and assumptions
- It supports strategic planning, budgeting and risk management.
- Some types of forecasting method are qualitative forecasting, time series analysis, regression analysis.

Management Accounting tools are important because they help the manager make informed decisions, measure the performance of outcomes, control cost, allocating resources to where it is needed most and finally to plan strategically for future business plans and spot potential risk. These tools form the backbone of effective management accounting practices, ensuring organizations are efficient and profitably. (Mowen, 2020)

6. Define and discuss: Liability (Financial Accounting)

6.1 Define liability (financial accounting)

According to the Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC), a liability is defined as "an obligation that an entity has to transfer assets or provide services o another entity in the future as a result of a past transaction or event."

The above definition encompasses the key elements of a liability:

- The present obligation,
- The past event giving rise to it,
- The future economic resource outflow,
- And the expectation of settlement

Liabilities are recorded on the balance sheet of an entity and are categorized based on their nature and expected timing of settlement (current liabilities if due within one year, and non-current liabilities if due beyond one year). They represent claims by creditors against the entity's assets and reflect the financial obligations that must be met over time. (Accounting Standards Condification, n.d.)

6.2 Discuss liability (financial accounting)

There are two main categories of liabilities based on their expected settlement period:

i. **Current liabilities**

Current liabilities are obligations that are due and payable within one year or the operating cycle of the business, whichever is longer. E.g., accounts payable, accrued expenses, and short-term loans.

ii. **Non-current liabilities (long-term liabilities)**

Non-current liabilities are obligations that are not expected to be settled within the next year or operating cycle. Non-current liabilities often include long-term debt, deferred tax liabilities, and lease obligations.

The importance of liabilities

Liabilities are prominently displayed on the balance sheet of an entity, which provides stakeholders with a snapshot of the entity's financial position at a given point in time. The balance sheet equation (Assets = Liabilities + Equity) highlights the relationship between an entity's assets, which represent its economic resources, and its liabilities, which represent its financial obligations. Understanding the composition and magnitude of liabilities helps investors, creditors, and analysts assess an entity's ability to meet its financial obligations and manage its overall financial health.

In conclusion, liabilities represent significant financial obligations that entities must disclose and manage responsibly. Their proper recognition and measurement are essential for maintaining transparency in financial reporting and ensuring stakeholders have accurate information for decision-making purposes. (Terry D. Warfield, 2007)

7. Define and discuss: The Journal of Accounting & Economics

7.1 Define the journal of accounting & economics

According to the lecture material Accounting choice research looks into how accounting plays a role in imperfect and incomplete markets. In perfect markets, financial disclosures and accounting-based contracts are unnecessary, but in imperfect markets, they are. Accounting choices are decisions that affect the output of the accounting system, such as financial statements, tax returns, and regulatory filings. This review defines accounting choice broadly, with an emphasis on how it affects market imperfections. This definition covers a variety of accounting decisions, such as LIFO vs. FIFO, lease structure, disclosure level, and adoption time. It also covers practical decisions, mostly for accounting reasons, such as increasing output to cut costs and lowering R&D expenditures to boost earnings. Real decisions include lowering fixed costs per unit and boosting output to lower costs.

In addition, the Journal of Accounting and Economics (JAE) is a scholarly journal that publishes research articles in the fields of accounting and economics. It is considered one of the leading academic journals in these disciplines, focusing on the intersection of accounting practices, economic theories, and their implications for business and policy.

7.2 Discuss the journal of accounting & economics

The Journal of Accounting & Economics basically publishes theoretical and empirical research that explores various aspects of accounting and their relationships with economic factors. Key topics covered in the journal include:

- Financial reporting
- Managerial accounting
- Auditing
- Corporate governance
- Capital markets research
- Financial economics
- Corporate finance
- Behavioral economics applied to accounting

Importance and Impact

The journal serves as a platform for rigorous academic research that contributes to both academic understanding and practical implications in accounting and economics. It is highly regarded for its role in advancing knowledge in these fields and influencing policies and practices in corporate governance, financial reporting, and auditing.

In conclusion from my understanding is that the Journal of Accounting and Economics plays a pivotal role in shaping research and scholarship in accounting and economics by publishing innovative and impactful research articles. Its contributions to theoretical development, empirical analysis and policy implications make it a key resource for academics, researchers, policymakers, and practitioners interested in understanding the complex interactions between accounting practices and economic outcomes. (Journal of Accounting and Economics, n.d.)

8. Define and discuss: Accounting-Base Contracts & Disclosures

8.1 Define accounting-based contracts & disclosures

Accounting-based contracts are agreements where the compensation or other contractual outcomes are tied to financial metrics reported in the accounting statements of one or both parties. These contracts are prevalent in various business contexts, including executive compensation agreements, supplier contracts, and performance-based incentives. The use of accounting measures ensures that the contractual terms align with financial performance goals, providing stakeholders with a tangible benchmark for evaluating performance and determining rewards or penalties. (Kenneth A. Merchant, 2007)

Disclosure Requirements

Disclosure in the context of accounting-based contracts involves the transparent reporting of:

1. **Contractual Terms**:

Clearly outlining the specific accounting metrics (e.g., revenue, earnings per share, return on investment) used to determine payments, bonuses, or other contractual outcomes.

2. **Potential Impacts**:

Describing how changes in these accounting metrics could affect the financial position, results of operations, or cash flows of the entity.

3. **Risk Factors**:

Identifying any risks associated with the variability or manipulation of accounting measures used in the contract, ensuring that stakeholders are aware of potential uncertainties or challenges. (Robert W. Holthausen, 1989)

8.2 Discuss accounting-based contracts & disclosures

Accounting-based contracts link contractual outcomes directly to financial measures reported in the accounting statements of one or more parties. Commonly used accounting metrics include:

- **Revenue**: Total income generated from sales of goods or services.
- **Earnings**: Net income or profit after all expenses have been deducted.
- **Return on Investment (ROI)**: Ratio of net profit to the total amount invested.
- **Earnings Per Share (EPS)**: Portion of a company's profit allocated to each outstanding share of common stock.

These metrics serve as performance benchmarks that determine payments, bonuses, or penalties under the contract. For example, executive compensation packages often include bonuses tied to achieving specific earnings targets or revenue goals. (Kenneth A. Merchant, 2007)

Importance of Disclosure

Disclosure requirements for accounting-based contracts focus on transparency and clarity in financial reporting. Key aspects of disclosure include:

1. **Contractual Terms**: Clearly outlining the terms of the contract, including the specific accounting metrics used to determine outcomes.
2. **Potential Impacts**: Describing how changes in these accounting metrics could affect financial results, highlighting potential risks and uncertainties.
3. **Risk Factors**: Identifying risks associated with the variability or manipulation of accounting measures used in the contract, ensuring stakeholders are informed of potential impacts on financial statements. (Robert W. Holthausen, 1989)

9. **Define and discuss: Mathematical Tools (Balance Sheets I)**

9.1 Define mathematical tools (Balance Sheets I)

A Balance sheet shows the 3 main accounts (assets, liabilities and equity) and compares the balances against previous periods. It follows the formula: assets = liabilities + owner's equity. Assets are what the company owns. Liabilities are what the company owes. Owner's equity is how much money company owners have invested in the business.

9.2 Discuss mathematical tools (balance sheets I)

Components of a Balance sheet

Assets

Accounts in this segment are listed top to bottom in order of their liquidity. Liquidity refers to the ease with which an asset can be converted into ready cash. They are divided into current assets, which can be converted to cash in one year or less and non-current or long-term assets, which cannot be converted in one year or less.

The general order of accounts within current assets are

1. Cash and Cash equivalents- They are the most liquid assets and can include Treasury bills and short-term certificates of deposits, as well as hard currency.
2. Marketable securities- They are equity and debt securities for which there is a liquid market.
3. Accounts receivable(A/R)- This refers to money that customers owe the company. This sometimes includes an allowance for doubtful accounts as some customers do not pay what they owe.

Long-Term assets include the following

1. Fixed assets- These include land, machinery, equipment, building and other durable, generally capital- intensive assets.
2. Intangible Assets- These are non-physical assets such as intellectual property and goodwill. These assets are generally only listed on the balance sheet if they are acquired, rather than developed in-house. Their value may be wildly understated or wildly overstated.

Liabilities

A liability is any money that a company owes outside parties, from bills it has to pay.

Current liabilities are due within one year and are listed in order of their due dates. Long-term liabilities, on the other hand, are due at any point after one year.

Current liabilities accounts are

- Current portion of long-term debt in the portion of a long-term dept due within 12 months.

- Interest payable is accumulated interest is owed, often due as past of a past due obligation such as late remittance on property tax.
- Wages payable is salaries, wages and benefits to employees, often for the most recent pay period.
- Accounts payable is often the most common current liability. Accounts payable is debt obligations on invoices processed as part of the operation of a business that are often due within 30 days of a receipt.

Some liabilities are often considered off the balance sheet, which means they are not included in the balance sheet. (W.T Harrison, 2021)

10. Define and discuss: Mathematical Tools (Balance Sheets II)

10.1 Define mathematical tools (balance sheets II)

Off-Balance sheet (OBS) or Incognito Leverage, means an asset or debt or financing activity not on a company's balance sheet. Companies can have a significant amount of OBS assets and liabilities, such as Financial institutions often offer asset management or brokerage (A business acting as a broker). The assets brokered as part of these offered services usually belong to the individual clients directly or in trust. The company provides management but the company itself has no direct claim to these assets, so they are not recorded in the balance sheet. Financial institutions may report OBS items in their accounting statements formally, and may also refer to "asset under management" a figure that may include on and off-balance sheet items.

10.2 Discuss mathematical tools (balance sheets II)

Analyzing balance sheets involves using various mathematical tools and ratios to evaluate a company's financial health, liquidity, solvency and operational efficiency.

Primary Tools and their applications

1. Current Ration- Measures the company's ability to pay short-term obligations with its short-term assets.
   Current Ratio= current assets/current liabilities
   A ratio above 1 indicates good short-term financial health, while a ratio below 1 suggests potential liquidity problems.
2. Quick Ratio (Acid-Test Ratio)
   Quick ratio= current assets-inventory/ current liabilities
   A higher ratio indicates better liquidity.
3. Debt to Equity Ratio
   Assesses the financial leverage and long-term solvency of the company.
   Debt to Equity=Total liabilities/ Total Equity
   A higher ratio indicates more debt relative to equity, which can signify higher financial risk
4. Working Capital

Working Capital = Current assets- Current liabilities
This indicates the company's short-term financial health and operational efficiency. Positive working capital means a company can cover its short-term liabilities, while negative working capital suggests potential liquidity issues.

5. Return on Assets (ROA)
   ROA= net income/ total assets
   It measures how efficiently a company uses its assets to generate profit.
   Higher ROA means better assets utilization
6. Return in Equity (ROE)
   ROE= Net Income/ total equity
   It evaluates the return generated on shareholders equity.
   Higher the ROE suggests more efficient use of equity.
7. Debt Ratio
   Debt Ratio= Total liabilities/ Total assets
   This indicates the proportion of assets financed by debt.
   A higher ratio means more assets are financed by debt, which is higher financial risk.
8. Asset turnover ratio
   Asset turnover ratio= Net sales/ Total assets
   This measures the efficiency of a company's use of its assets in generating sales revenue.
   A higher ratio indicates more efficient use of assets.

Mathematical Tools helps stakeholders analyze and interpret the financial health of a company. These tools help in making informed and accurate business decisions regarding investments, lending and management practices. (W.T Harrison, 2021)

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