

MTH 130 MODERN BUSINESS MATHEMATICS

Throughout the course, the student should be able to manipulate formulas to obtain a solution to a problem depending on what is unknown.

1. Arithmetic Review
 - 1.1 Review rounding numbers to a specific place value.
 - 1.2 Review simplifying fractions to lowest terms.

2. Ratios and Proportions
 - 2.1 Set up a ratio.
 - 2.2 Reduce a ratio to lowest terms by:
 - a. using the GCF,
 - b. dividing and expressing the answer as a single numerical value or as a comparison to 1.
 - 2.3 Solve a proportion.
 - 2.4 Solve a problem by first setting up a proportion and then solving that proportion.

3. Percents and Percentages
 - 3.1 Work with decimals, fractions and percents and convert from one form to another when necessary.
 - 3.2 Identify and calculate base, rate and percentage in various types of problems.

4. Business Graphs
 - 4.1 Construct and interpret the following types of graphs with emphasis on the interpretation:
 - a. line graphs,
 - b. bar graphs,
 - c. component part graphs.

5. Statistics
 - 5.1 Calculate the mean, median, mode, midrange and range for ungrouped data.
 - 5.2 Know the difference between and calculate a normal mean and a weighted mean.
 - 5.3 Calculate the standard deviation for ungrouped data.
 - 5.4 Calculate and interpret a percentile ranking.
 - 5.5 Determine which data value is at a specific percentile.
 - 5.6 Draw and label a normal curve.
 - 5.7 Solve application problems using the normal curve.

6. Financial Statements
 - 6.1 Complete an income statement and a comparative income statement.
 - 6.2 Complete a balance sheet and a comparative balance sheet.
 - 6.3 Calculate the working capital ratio and the quick ratio for a given balance sheet.

7. Commercial Discounts
 - 7.1 Calculate the % paid and the SED for trade discounts.
 - 7.2 Calculate the net cost and the dollar amount of a discount on merchandise after a:
 - a. trade discount,
 - b. chain discount,
 - c. cash discount.
 - 7.3 Determine the time periods, payments, credits and balances for problems involving cash discounts.

8. Retailing
 - 8.1 Determine the cost and/or selling price of merchandise when markup is based on either quantity.
 - 8.2 Determine the percent of markup based on either cost or selling price when the cost and the selling price are known.
 - 8.3 Determine the selling price and/or sale price after a markdown.
 - 8.4 Determine the percent of markdown when the selling price and the sale price are known.
 - 8.5 Determine the break-even amount.
 - 8.6 Determine whether there is a net profit, net loss or neither after a markdown.
 - 8.7 Calculate a unit price.
 - 8.8 Calculate average inventory and turnover at:
 - a. cost,
 - b. selling price.
9. Payroll
 - 9.1 Calculate gross pay for a person receiving a wage, salary, piece rate, commission or any combination of these.
 - 9.2 Calculate Federal withholding tax.
 - 9.3 Calculate FICA tax.
 - 9.4 Calculate net pay for a person receiving a wage, salary, piece rate, commission or any combination of these.
10. Taxes
 - 10.1 Calculate sales, excise and property taxes and rates. The instructor may choose to calculate income taxes, if time permits.
11. Insurance
 - 11.1 Calculate the premiums for owner's, motor vehicle and life insurance using tables. The instructor may choose to calculate the premium for medical insurance using tables, if time permits.
 - 11.2 Determine insurance settlements for owner's and motor vehicle insurance.
 - 11.3 Determine nonforfeiture options for life insurance.
12. Simple Interest
 - 12.1 Calculate simple interest, amount, principal, rate and time.
 - 12.2 Solve application problems involving the concepts listed in 12.1.
13. Compound Interest
 - 13.1 Calculate compound interest, amount and present value.
14. Annuities
 - 14.1 Calculate the compound interest, amount and periodic payment on an ordinary annuity and an annuity due.
 - 14.2 Solve application problems involving the concepts listed in 13.1 and 14.1.