Indiana CTE

Business Math: Recommended 10 & 11

Math Concepts

1. **Students demonstrate the knowledge and skills necessary to determine the correct algebraic process to solve problems for a variety of business situations.**
   1. Reinforce basic math skills, such as but not limited to percents, decimals, and fractions, and algebraic skills of solving equations with one or two variables BMH-1.1
   2. Select and use appropriate formulas to solve problems BMH-1.2
   3. Construct and solve an equation for a given problem using units BMH-1.3
   4. Determine if a solution to an algebraic computation is reasonable BMH-1.4
   5. Use algebraic graphs in real world situations BMH-1.5
   6. Apply complex functions to business financials BMH-1.6
2. **Students apply geometry principles to solve problems for a variety of business situations.**
   1. Demonstrate ability to take measurements and convert as needed BMH-2.1
   2. Use formulas and geometric reasoning necessary for area, perimeter, circumference, diameter, and volume BMH-2.2
   3. Determine if a solution to a geometry computation is reasonable BMH-2.3
3. **Students analyze and interpret data using common probability and statistical procedures to solve problems for a variety of business situations.**
   1. Construct, read, and interpret tables, charts, and graphs BMH-3.1
   2. Use probability concepts to predict events BMH-3.2
   3. Construct and interpret frequency distribution BMH-3.3
   4. Calculate measures of range and central tendency (e.g., mean, median, mode) BMH-3.4
   5. Determine if a solution to probability and statistical computation is reasonable BMH-3.5

Accounting Principles

1. **Students apply math concepts to analyze and solve problems related to ccounting principles for business.**
   1. Calculate equity using the accounting equation BMH-4.1

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2 Calculate and plan for taxes including, sales, income, and property BMH-4.2

3 Calculate cost of goods sold, gross profit, operating expenses, and net profit BMH-4.3

4 Determine cost of goods sold using different inventory valuation methods (e.g., LIFO, FIFO) BMH-4.4

5 Calculate manufacturing costs and break-even point BMH-4.5

6 Calculate and plan for a variety of expenses BMH-4.6

7 Calculate company or department overhead based on various situations (e.g., sales or floor space) BMH-4.7

8 Calculate depreciation of assets using various methods (e.g., declining-balance method, sum-of-the-years method) BMH-4.8

9 Compare the costs of renting, leasing, or buying plant or current assets BMH-4.9

2 **Students apply math concepts to analyze and solve problems related to payroll for business.**

1 Calculate and maintain employee payroll records BMH-5.1

2 Calculate employee and employer taxes and prepare related reports BMH-5.2

3 Calculate fringe benefits and analyze their effect on the total wage package BMH-5.3

4 Analyze costs of recruiting, placing, and training employees BMH-5.4

Banking and Financial Services

1 **Students apply math concepts to analyze and solve problems related to banking services for business.**

1 Maintain checking account records (e.g. checks, check register, and deposit slips) BMH-6.1

2 Show a reconciliation of a bank statement BMH-6.2

3 Compare and contrast different financial institutions and their services Assess data from the stock markets used in making investment decisions BMH-6.3

2 **Students apply math concepts to analyze and solve problems related to the principles of business finance.**

1 Calculate various types of interest, (e.g., simple, compound, variable, exact, or ordinary) BMH-7.1

2 Calculate the costs associated with installment purchases BMH-7.2

3 Compare cash price to installment price in order to make a purchasing decision BMH-7.3

4 Compute the monthly payment, interest, and total amount required to amortize a loan (e.g. mortgage) BMH-7.4

5 Compare and contrast benefits and cost of long-term debt options for promissory notes and bonds BMH-7.5

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6 Compare and contrast benefits and costs of investment options (e.g. money-markets, CD's, stocks, bonds) BMH-7.6

7 Understand and calculate present value and future value BMH-7.7

8 Determine the finance charges on credit card balances BMH-7.8

9 Compare and contrast the advantages and disadvantages of employee credit card use for business expenses BMH-7.9

10 Compare and contrast the advantages and disadvantages of offering credit to customers BMH-7.10

Marketing Principles

1 **Students apply math concepts to analyze and solve problems related to marketing principles for business.**

1 Compare and contrast expenses associated with various advertising mediums

2 Compute extensions, subtotals, sales tax, and sales totals for a sales transaction

3 Compute markup or markdown

4 Calculate and analyze different types of trade discounts

5 Calculate the response rate and results of surveys

6 Analyze demographic information to make sound marketing decisions

7 Using trend data and forecasting models, calculate future sales

8 Calculate and analyze market share

9 Plan and design various displays for products with different size and shape requirements

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Management Principles

1 **Students apply math concepts to analyze and solve problems related to management principles.**

1 Interpret financial statements to make sound managerial decisions BMH-9.1

2 Create and analyze budgets BMH-9.2

3 Calculate inventory balances and stock reorder points BMH-9.3

4 Calculate necessary ratios to make sound managerial decisions BMH-9.4

5 Calculate the cost of full-time versus part-time employees BMH-9.5

6 Compare and contrast the different types and costs relating to insurance (e.g. property, automobile, bonding) BMH-9.6

Communication

1 **Students develop skills to create and present accurate and effective communication for specific business related purposes and audiences.**

1 Use clear and legible handwriting in all written work and communication BMH-10.1

2 Demonstrate active listening skills BMH-10.2

Use discussion skills to assume leadership and participant roles BMH-10.3

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4 Use research, composition, and oral skills to present information for a variety of situations utilizing appropriate technology BMH-10.4

5 Work cooperatively with peers and authority figures BMH-10.5

6 Use clear and concise writing skills to describe, explain, and inform various audiences BMH-10.6

7 Follow and interpret directions, graphs, charts and diagrams found in technical writing BMH-10.7

8 Use appropriate industry terminology BMH-10.8