Adult Basic Education
Mathematics

Mathematics 2105A

Wages, Salaries and Expenses
Personal Banking

Study Guide

Prerequisite: Grade 9 Mathematics

Credit Value: 1

Text: *Essentials of Mathematics 10*, Baron, Celia; Pacific
                     Educational Press, 2003.

Mathematics Courses [General College Profile]

Mathematics 2105A
Mathematics 2105B
Mathematics 2105C
Mathematics 3107A
Mathematics 3107B
Mathematics 3107C
Mathematics 3109A
Mathematics 3109B
Mathematics 3109C

Table of Contents

I. Introduction to Mathematics to 2105A

The main topics of Unit 1, income and spending, should help you to manage your income and make informed decisions about spending. This unit will be especially helpful to those of you who are already holding full or part-time jobs.

The second unit will give you information on current banking procedures and the proper way to fill out forms at the bank. If you have a bank account, you will find this unit especially useful. If you do not have a bank account, you may wish to open one before you finish this unit. The topics covered should help you in making a decision on which type of account best meets your needs.

You should know how to work with percents, decimals and fractions. See your instructor for review worksheets on these topics to ensure that you can do these calculations.

II. Resources

You will require the following:
- *Essentials of Mathematics 10*
- scientific calculator

Notes concerning the textbook:

Glossary: Knowledge of mathematical terms is essential to understand concepts and correctly interpret questions. Written explanations will be part of the work you submit for evaluation, and appropriate use of vocabulary will be required.

Your text for this course includes a Glossary where definitions for mathematical terms are found. Be sure you understand such definitions and can explain them in your own words. Where appropriate, you should include examples or sketches to support your definitions.

Examples: You should study the **Examples** in each section carefully and see your instructor if you have any questions. These **Examples** have full solutions to problems that will be a great help when answering assigned questions from **Notebook Assignment**.

Chapter Project: Unless your instructor directs you differently, you should omit all **Chapter Projects** and **Project Activity**.

To the Student

Notes concerning technology:

You should have a scientific calculator (the word "scientific" should be written on it) and the instruction booklet that belongs with it. Scientific calculators are fairly inexpensive. Even though your calculator will be a useful tool, you should be able to solve most exercises by using paper and pencil.

III.   Study Guide

This Study Guide is required at all times. It will lead you through the course and you should take care to complete each unit of study in the order given in this Guide.

To be successful, you should read the **References and Notes** first and then, when indicated by the ▶▶ symbols, complete the **Work to Submit** problems. Many times you will be directed to see your instructor, and this is vital, especially in a Mathematics course. If you have only a hazy idea about what you just completed, nothing will be gained by continuing on to the next set of problems.

To the Student

The Study Guide has the following format:

Reading for this Unit: In this box, you will find the name of the text, and the chapters, sections and pages used to cover the material for this unit. As a preliminary step, skim the referenced section, looking at the name of the section, and noting each category. Once you have completed this overview, you are ready to begin.

References and Notes

This left hand column guides you through the material to read from the text.

It will also refer to specific **Examples** found in each Exploration. You are directed to carefully study these **Examples** with solutions and see your instructor if you have any questions. The **Examples** are important in that they not only explain and demonstrate a concept, but also provide techniques or strategies that can be used in the assigned questions.

You should read and understand the **Hints** and **New Terms** that are at the bottom of selected pages in the textbook.

The symbols ▶▶ direct you to the column on the right which contains the work to complete and submit to your instructor. You will be evaluated on this material.

This column will also contain general notes which are intended to give extra information and are not usually specific to any one question.

Work to Submit

There are two basic categories included in this column that correspond to the same categories in the sections of the text. They are **Mental Math** and **Notebook Assignment**.

Mental Math: These problems should be completed using pencil and paper. If you have difficulty, you should see your instructor for extra practice problems. Usually the skills that are applied in **Mental Math** are those required to successfully complete **Notebook Assignment**.
Your instructor will provide the answers to **Mental Math** exercises.

Notebook Assignment: This section provides a series of problems similar to those in the **Exploration**. You should attempt these problems only after the **Exploration** problems have been understood and all assigned **Mental Math** and practice worksheets have been completed.
The textbook contains answers to **Notebook Assignment**. Your instructor will provide more detailed solutions with workings and some explanations.

This column will also contain **Notes** which give information about specific questions.

IV.   Recommended Evaluation

Written Notes	10%
Assignments	10%
Test(s)	30%
Final Exam *(entire course)*	<u>50%</u>
	100%

Unit 1 - Wages, Salaries and Expenses

To meet the objectives of this unit, students should complete the following:

Reading for this unit: *Essentials of Mathematics 10*

Chapter 1:	Exploration 2:	pages 18 - 22
	Exploration 3:	pages 23 - 29
	Exploration 4:	pages 30 - 35
	Exploration 5:	pages 36 - 52
	Exploration 6:	pages 54 - 60
	Exploration 8:	pages 71 - 75
	Chapter Review:	pages 79 - 86

References and Notes	**Work to Submit**
Omit **Chapter Project** and all references to **Project Activity**.	
Read **Exploration 2.** Study and work through the calculations given in **Examples 1** and **2** on pages 19 and 20.	
Read **Hints** and **New Terms** on the bottom of the pages. Answer the following questions. ▶▶	1.1 **Mental Math**, page 19
	1.2 **Mental Math ,** page 20 Answer questions 1 and 2.
See your instructor for solutions to **Mental Math**.	1.3 **Notebook Assignment**, page 22 Answer questions 1, 2, 3 and 4. (*See note below on questions 1 and 2.*)
Answers to **Notebook Assignment** are in the back of your textbook. Your instructor will have detailed solutions to these problems.	**Questions 1 and 2:** Your estimates for living expenses should reflect the cost in your own community.

Unit 1 - Wages, Salaries and Expenses

References and Notes	Work to Submit

	1.4 Briefly define the following terms:
	        i) budget
	        ii) salary
	        iii) wages
	        iv) take-home pay
	        v) net pay
	        vi) benefits
	        vii) balanced budget

See your instructor for **Practice Exercises 1** and **2**, *Calculating Wages* and *Calculating Salaries*.	1.5 **Practice Exercise 1**, *Calculating Wages*
	        Answer questions 1 - 9.
	
	Note: See your instructor for solutions to these questions.
	
	1.6 **Practice Exercise 2**, *Calculating Salaries*
	        Answer questions 1 - 6.

Before completing **Exploration 3**, you should see your instructor for a review worksheet on changing mixed fractions to improper fractions and changing improper fractions to mixed fractions.
 	
Read **Exploration 3** and work through the calculations given for each of the 6 **Examples**.
 	
Answer the following questions.
▶▶
 	
.
	Note: See your instructor for solutions to these questions.
	
	1.7 **Mental Math**, page 24
	        Answer questions 1 and 2.
	
	1.8 **Notebook Assignment**, pages 26 - 29
	        Answer questions 1 - 13.

Unit 1 - Wages, Salaries and Expenses

References and Notes	**Work to Submit**
See your instructor for a copy of **Practice Exercise 3**, *Overtime Pay*	1.9 **Practice Exercise 3**, *Overtime Pay* Answer questions 1 - 6.
	Note: See your instructor for solutions to these questions.
Read **Exploration 4** and work through the calculations given for **Examples 1** to **5**.	
To convert minutes to hours, divide by 60. To convert hours to minutes, multiply by 60.	
There are several strategies you can use to calculate time correctly. One method counts the time in <u>hours</u> from the start time until the <u>hour</u> of the finish time and then counts the minutes remaining.	
Another method converts hours and minutes into decimal equivalents of hours and then subtracts.	
Answer the following questions. ▶▶	1.10 **Mental Math**, page 31 Answer questions 1 and 2.
	1.11 **Notebook Assignment**, pages 34 and 35 Answer questions 1 - 12.

Unit 1 - Wages, Salaries and Expenses

References and Notes

See your instructor for **Practice Exercise 4**, *Rounding and Estimating*.

Read **Exploration 5**.
In order to accurately and quickly read time cards, you will use your skills of rounding and converting hours and minutes to decimal hours.

Carefully study **Examples 1 - 3**.

Answer the following questions. ▶▶

Read **Exploration 6**, **Payroll Deductions**.

In the textbook, payroll deductions are calculated. However, in this course you will **not** be calculating payroll deductions.

Work to Submit

1.12   **Practice Exercise 4**, *Rounding and Estimating*
        Answer questions 1 - 3.

Note: See your instructor for solutions to these questions.

1.13   **Notebook Assignment**, pages 40 - 52
        Answer questions 1 - 12.

Note: Several of these questions include a "quarter-hour penalty". This means that if an employee is between one and fifteen minutes late for a shift, or leaves one to fifteen minutes before the end of a shift, 15 minutes are deducted from the total time worked.

Unit 1 - Wages, Salaries and Expenses

References and Notes	Work to Submit

Read page 54 and **Example 1** and **Example 2** and note possible payroll deductions.
 	
Answer the following questions. ▶▶
	1.14 **Mental Math**, page 60
	Answer questions 1 and 2.
	
	1.15 Briefly describe the following terms:
	    i) Canada Pension Plan (CPP)
	    ii) Employment Insurance (EI)
	    iii) Income Tax (IT)
	    iv) net pay
	    v) taxable income

[Omit **Exploration 7**.] Read **Exploration 8**. Study **Examples 1**, **2** and **3** and work through the solutions. Read **Hints** on page 73. If necessary, see your instructor for a review on: • calculating a percent raise, • changing from a percent to a decimal and • changing from a fraction to a percent.	

Unit 1 - Wages, Salaries and Expenses

References and Notes	**Work to Submit**
Example 3 on page 73 demonstrates two ways to find a % increase in salary. There are two ways of finding the effect of a raise. **Method 1:** For a 15% raise, multiply the base amount by 0.15 and then add the result to the base amount. For example: if you make $9.00 per hour and you receive a 15% raise you would do the following calculation: $\$9.00 \times 0.15 \ = \ \$1.35$ $\$9.00 + \$1.35 \ = \ \$10.35$ A 15% raise on an hourly rate of $9.00 would be $10.35. **Method 2:** A faster method is to multiply the base amount by 1.15. For example: $\$9.00 \times 1.15 = \$10.35$. The disadvantage of the faster way is that it does not tell you the *amount* of the raise, just the final wage.	

Unit 1 - Wages, Salaries and Expenses

References and Notes	Work to Submit

Answer the following questions. ▶▶	**1.16** **Notebook Assignment**, pages 73 - 75
	      Answer questions 1 - 16.
	
	1.17 **Chapter Review**, pages 79 - 86
	      Answer questions 1, 2, 3, 5 - 12 and 13 - 15.
	      (*See note below on questions 13 - 15.*)
	
	Questions 13 - 15: Complete the time cards <u>only</u>. Ignore all references to claim codes and net weekly pay.

Unit 2 - Personal Banking

To meet the objectives of this unit, students should complete the following:

Reading for this unit:	*Essentials of Mathematics 10*		
	Chapter 2:	Exploration 1:	pages 92 - 99
		Exploration 2:	pages 100 - 104
		Exploration 3:	pages 105 - 109
		Exploration 4:	pages 112 - 125
		Exploration 5:	pages 127 - 132
		Exploration 6:	pages 133 - 136
		Chapter Review:	pages 137 - 141
		Case Study:	pages 143 and 144

References and Notes	**Work to Submit**
Note: Omit **Chapter Project** and all references to **Project Activity**. Being able to use bank forms correctly, and knowing current account balances are valuable skills. Even though many banks are moving to "paperless" banking, there is still a need to write cheques and reconcile financial statements. Read **Exploration 1**, page 92. Follow each of the steps in the solution to each **Example**. Answer the following questions. ▶▶ See your instructor for copies of deposit slips, withdrawal slips and blank cheques.	 2.1 **Small Group Activity**, page 92 **Note**: Answer this question individually unless there are other students in your class working on the same topic. Check with your instructor to see if your list is complete.

Unit 2 - Personal Banking

References and Notes	Work to Submit
See your instructor for **Practice Exercise 5**, *Deposit Slip and Cheque*.	2.2 **Notebook Assignment**, pages 97 - 99 Answer questions 1 - 8, 10 and 11.
	2.3 **Practice Exercise 5**, *Deposit Slip and Cheque* Answer questions 1 - 5.
	Note: See your instructor for solutions to these questions.
Read **Exploration 2**. Study **Example 1**. Answer the following questions. ▶▶ See your instructor for copies of **Transaction Record**.	2.4 **Notebook Assignment**, pages 102 - 104 Answer questions 1 - 8. (*See note below on question 8*.)
	Question 8: Tax is calculated at 14%.
Read **Exploration 3**. Study **Examples 1**, **2** and **3**. Answer the following questions. ▶▶	2.5 **Mental Math**, page 107 Answer questions 1, 2 and 3.
	2.6 **Notebook Assignment**, pages 108 and 109 Answer questions 1, 3 and 6.
	2.7 Briefly define the terms: i) reconcile ii) service charge

References and Notes	Work to Submit

Read **Exploration 4**. Study **Examples 1** and **2**.
 	
Answer the following questions. ▶▶
 	
See your instructor for copies of **Statement of Reconciliation** and **Transaction Record**. You will need them for questions 3 - 9.
 	
See your instructor for **Practice Exercise 6**, *Transaction Record and Bank Statement*
 	
Read **Exploration 5**.
 	
Study the descriptions of the four types of bank accounts on pages 128 and 129.
 	
If your instructor has recent bank brochures on different accounts, you can use them instead.
 	
Study **Example 1**.
	
	2.8 **Notebook Assignment**, pages 117 - 125
	       Answer questions 1 - 9.
	
	2.9 **Practice Exercise 6**, *Transaction Record and Bank Statement*
	       Answer questions 1 and 2.
	
	Note: See your instructor for solutions to these questions.

Unit 2 - Personal Banking

References and Notes	Work to Submit

Answer the following questions. ▶▶	**2.10** Briefly define the terms:
	   i) full-serve transaction
	   ii) self-serve transaction
	   iii) waive
	
	2.11 **Notebook Assignment**, page 132
	   Answers questions 1 and 2.

Read **Exploration 6**.
 	
Study **Examples 1** and **2**.
 	
See your instructor to obtain copies of **Transaction Record**.
 	
Answer the following questions. ▶▶
	2.12 **Notebook Assignment**, page 136
	   Answer questions 1, 2 and 5.
	
	2.13 **Chapter Review**, pages 137 - 141
	   Answer questions 1 - 10.
	
	2.14 **Case Study**, pages 143 and 144
	   Answer questions 1 - 4.