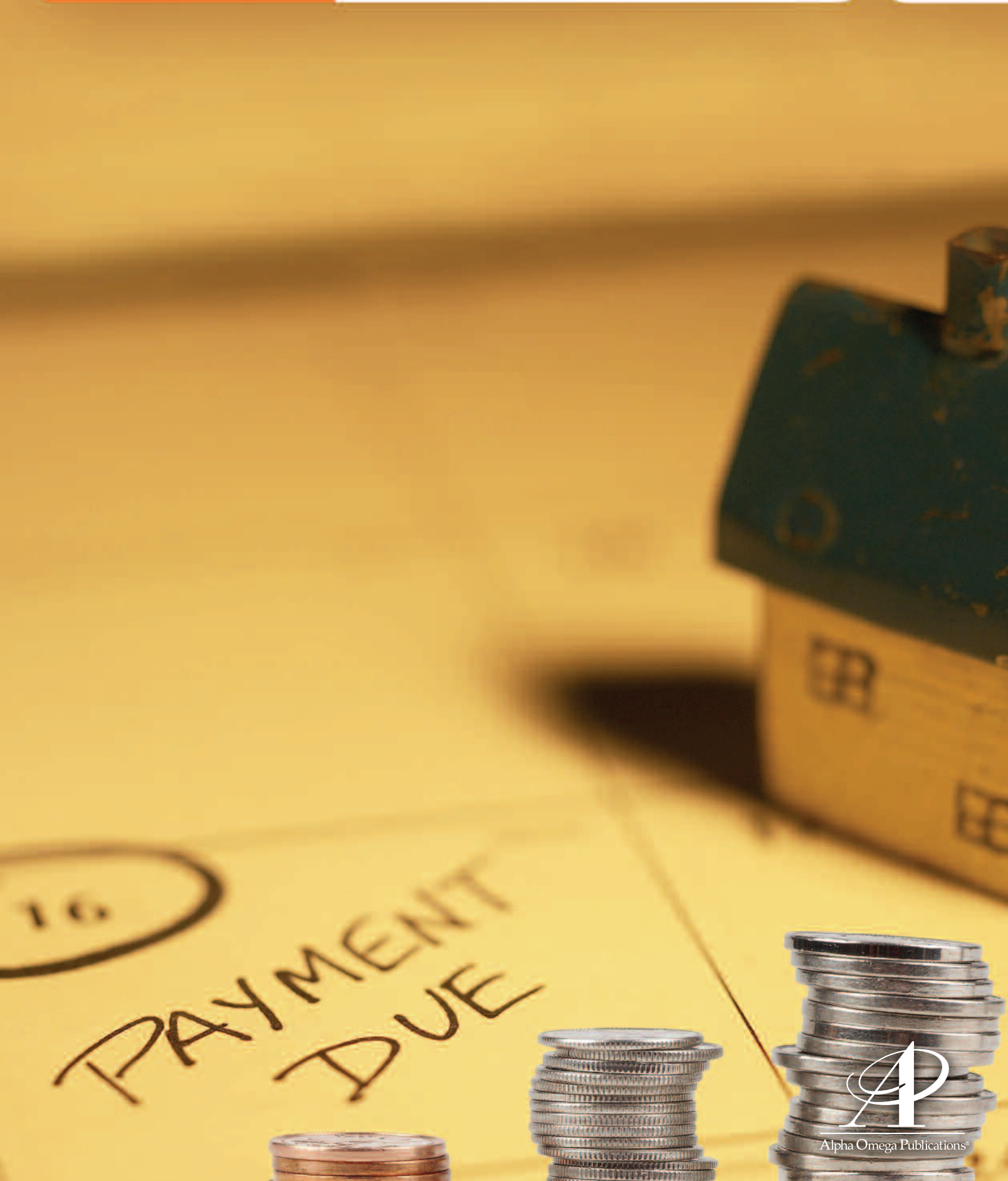
LIFEPAC®

Consumer Math

Student Book

Unit 3



Alpha Omega Publications®

CONSUMER MATHEMATICS 3
FAMILY FINANCES I

CONTENTS

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Alpha Omega Publications®

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FAMILY FINANCES 1

With this LIFEPAC we begin a look at family finances that we will conclude in the following LIFEPAC. We will look at income, taxes, budgets, and buying. Much could be said about each of these subjects, but the effort has been made to select those things that will be both interesting and helpful to the readers of this material. You will see how wages, salaries, and commissions are paid in many types of jobs and how profit and loss are determined for self-employed people. You will learn about the different kinds of taxes that every citizen pays. Budgets will be presented, with the emphasis on planning a workable budget for an individual or family and then making the budget work. The LIFEPAC closes with a section on buying, with a look at the real costs of buying on the installment plan. These techniques will be useful to you as a single person; also, as you prepare to establish a family someday, perhaps this material will help.

OBJECTIVES

Read these objectives. The objectives tell you what you will be able to do when you have successfully completed this LIFEPAC.

When you have finished this LIFEPAC, you should be able

1. To calculate weekly, biweekly, semimonthly, monthly, and annual salaries.
2. To calculate wages by the hour and by the unit.
3. To calculate commissions.
4. To calculate self-employment profit and loss.
5. To calculate the FICA tax on a given paycheck.
6. To calculate the federal income tax to be withheld on a given paycheck.
7. To calculate various sales taxes.
8. To calculate the property tax on a given piece of property.
9. To calculate how much of each month's income is allotted for each of several budget items, given the per cent allotted.
10. To discuss ways of making a budget work.
11. To solve cost-markup-sales problems.

12. To calculate discounts, markdowns, and sales.

13. To translate the abbreviations in real estate advertisements.

14. To discuss ways to save money when buying food.

15. To calculate the actual cost of buying on the installment plan.

Survey the LIFEPAC. Ask yourself some questions about this study. Write your questions here.

I. INCOME

OBJECTIVES

1. To calculate weekly, biweekly, semimonthly, monthly, and annual salaries.
2. To calculate wages by the hour and by the unit.
3. To calculate commissions.
4. To calculate self-employment profit and loss.

Any person may have basically four different types of income: salary, wages, commission, and profits from self-employment. We shall discuss the mathematics involved in each type of income. Let us look first at salary.

SALARY

A salary is a payment based on a certain time period.

A person who is paid a salary has a specific job to do. He is expected to do that job. As a general rule, a salaried person is expected to keep regular hours; but he does not check in and out like a person who is paid wages. Salary can be quoted as so much per week, month, or year. Sometimes the pay period is not the same as the salary period, so we must learn how to calculate the paycheck. Checks are issued weekly, biweekly, semimonthly, or monthly.

NOTE: Salary examples in this section are for practice and calculation purposes. The amounts may not reflect what the student is familar with.

DEFINITIONS

Salary is a payment based on a time period.

Biweekly means every two weeks.

Semimonthly means twice a month.

A person paid biweekly, for example, gets a check every other Friday. Semimonthly checks, on the other hand, are usually issued on the first and fifteenth of the month or on the fifth and twentieth of the month.

If the salary quoted is an annual salary, we divide it by 52 to find the weekly check, by 26 to find the biweekly check, by 24 to find the semimonthly check, or by 12 to find the monthly check.

Model: Calculate the paycheck amounts on a salary of $12,000 per year.

Weekly: $12,000 ÷ 52 = $230.77

Biweekly: $12,000 ÷ 26 = $461.54

Semimonthly: $12,000 ÷ 24 = $500.00

Monthly: $12,000 ÷ 12 = $1,000.00

Complete these activities.

1.1 Leslie makes $16,000 per year. She is paid weekly. What is the amount of her weekly paycheck? _____

1.2 George earns a salary of $14,500 per year. He gets a paycheck every other Friday. What is the amount of each check?

_____

1.3 At an annual salary of $15,000 per year, find the amount of semimonthly paychecks. _____

1.4 Calculate the monthly paycheck of an office manager whose salary is $27,000 per year. _____

Of course, if we know what the pay period is and how much the paycheck is, we can calculate the annual salary by multiplying instead of dividing.

Model: A paycheck of $300, on a semimonthly pay scheme, means an annual salary of $300 x 24 = $7,200.

Write the annual salary in the blanks in the following chart.

	Paycheck	Pay Period	Annual Salary
1.5	$1,200	monthly	_____
1.6	$ 900	biweekly	_____
1.7	$ 650	weekly	_____
1.8	$ 700	semimonthly	_____

WAGES

Now we shall see how to calculate the paycheck of a person paid wages.

> DEFINITION:
>
> A *wage* is a payment based on actual working time or actual production.

Many people are paid an hourly wage. That is to say, for every hour they work they are paid a certain amount. To find the amount of the total paycheck, we multiply the hours worked by the rate per hour.

Model: A person who works 40 hours per week at \$3.50 per hour earns $40 \times 3.50 = \$140$ for the week.

People who are paid wages usually punch in and out on a time clock that keeps track of when they arrive and when they leave. Wages are usually paid to the nearest $\frac{1}{4}$ hour.

Model: Jeff's time card shows that he worked 8 hours on Monday, $7\frac{1}{2}$ hours on Tuesday, $7\frac{3}{4}$ hours on Wednesday, $7\frac{1}{4}$ hours on Thursday, and 8 hours on Friday.

Find the total hours for the week by adding:

$8 + 7\frac{1}{2} + 7\frac{3}{4} + 7\frac{1}{4} + 8 = 38\frac{1}{2}$ hours.

Calculate the total hours and weekly paychecks of the following people.

		Hours Worked					Total Hours	Rate per Hour	Paycheck
		M	T	W	T	F			
1.9	Sue Black	8	8	8	8	8	a.	\$3.75	b.
1.10	Jerry Atrix	$7\frac{1}{4}$	3	$6\frac{3}{4}$	8	5	a.	\$3.00	b.
1.11	Sam Ting	$7\frac{3}{4}$	$7\frac{1}{4}$	$7\frac{3}{4}$	$7\frac{1}{4}$	$7\frac{3}{4}$	a.	\$2.75	b.

Many firms pay "time and a half" for overtime for any hours beyond 40 worked in any one week. This phrase means that if a person works 45 hours, he is paid for $47\frac{1}{2}$ hours. To calculate "time and a half," subtract 40 from the total hours worked to find the overtime hours, then add to the total

hours worked $\frac{1}{2}$ hour for every hour of overtime.

Model: Suppose a man works 48 hours one week.
48 - 40 = 8 overtime hours
Total paid hours = 48 + ($\frac{1}{2}$ x 8) = 48 + 4 = 52

[redacted] Calculate the total paid hours, and the weekly pay at $4.25 per hour, of the following workers.

		Total Paid Hours	Weekly Pay
1.12	Tim Carter, who worked 50 hours.	a.	b.
1.13	Jesse Jones, who worked 47$\frac{1}{2}$ hours.	a.	b.
1.14	Barbara Burns, who worked 44 hours.	a.	b.

Some wages are based not on how many hours a person works, but on how many units a person produces. To calculate a person's wages under such a plan, multiply the number of units produced by the rate per unit.

Model: Von Dyer is paid $0.09 per unit.
One week he produces 1,102 units.
His pay is $0.09 x 1,102 = $99.18.

[redacted] Calculate the paychecks of the following people.

	Name	Units Produced					Total Units	Rate per Unit	Paycheck
		M	T	W	T	F			
1.15	Zeiner	180	165	149	157	181	a.	$0.10	b.
1.16	Gross	100	103	117	100	98	a.	$0.17	b.
1.17	Wright	83	70	65	72	81	a.	$0.35	b.

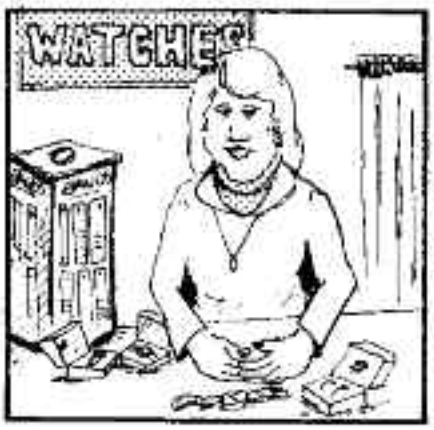
COMMISSION

Let us look now at how to calculate a commission. Many salespeople earn a commission on the things they sell.

DEFINITION

A *commission* is an earning equal to a certain percentage of sales.

Model: Sally is paid a commission of 37% on all sales. If her sales for August amount to $1,280, her pay for the month is 37% of $1,280; 0.37 x $1,280 = $473.60.



Some salespersons receive a salary plus a commission. In this case the commission is calculated and added to the salary to find the paycheck.

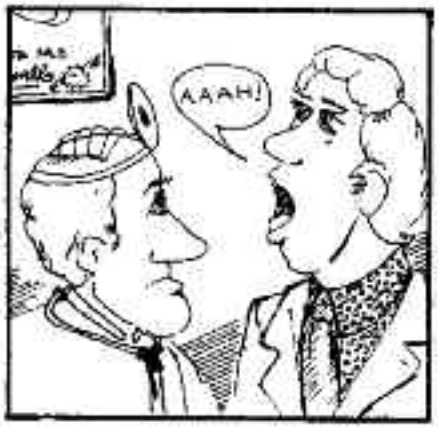
Solve the following problems.

1.18 Robert gets a commission of 30% on all sales. He sold $750.00 worth of goods. Find the amount of his paycheck.

1.19 Josephine earns a salary of $75.00 per week, plus a commission of 10% on all sales. Last week she sold $1,043 worth of goods. Calculate her pay.

SELF-EMPLOYMENT

People who are self-employed do not receive salary, wages, or commissions. Rather, they earn money by charging fees for services, or by making a profit as they buy or sell goods. To make a profit, a self-employed person must earn more than it costs him to do business. For example, consider a doctor. If his operating expenses (nurses' salaries, office rent, supplies, and so on) amount to $35,000 per year, he must take in fees of $45,000 per year to earn $10,000. Or, consider the owner of a candy store. If the goods he sold cost him $27,200 one year, and his operating expenses were $8,400, then to make a profit, he had to have sales of more than $27,200 + $8,400 = $35,600.



If a self-employed person has more income than outgo, we say he operated at a profit. If his outgo exceeded his income, however, he operated at a loss. To indicate a loss, place parentheses around the amount of the loss.

Model: A loss of $4,000 is written ($4,000).

Calculate the profit or loss of the following persons.

1.20 Dr. H. C. Corey had operating expenses of $43,000 for 1977. His fees during that year amounted to $37,500.

profit (or loss) _____

1.21 Katie Goode's cake store had sales of $43,750 last year. The goods she sold cost her $20,410, and her operating expenses were $9,300.

profit (or loss) _____

1.22 David K., a lawyer, had fees of $25,000 last year. His operating expenses were these:

secretary (part-time)	$ 5,000
office rental	$ 4,300
stationery and other supplies	$ 1,500
other expenses	$ 2,000
total expenses	$12,800

profit (or loss) _____

Review the material in this section in preparation for the Self Test. The Self Test will check your mastery of this particular section. The items missed on this Self Test will indicate specific areas where restudy is needed for mastery.

SELF TEST 1

Complete the following chart (each answer, 3 points).

	Yearly Salary	Pay Period	Paycheck
1.01	$12,000	semimonthly	_____
1.02	$16,500	weekly	_____
1.03	$27,050	monthly	_____
1.04	$14,500	biweekly	_____
1.05	_____	biweekly	$ 475.25
1.06	_____	monthly	$1,937.00
1.07	_____	semimonthly	$ 875.00
1.08	_____	weekly	$1,000.00

Calculate the total hours and the weekly paychecks of the following people. Remember to calculate time and a half for any hours over 40 per week (each answer, 3 points).

	Name	Hours Worked					Total Hours	Paid Hours	Rate per Hour	Pay-check
		M	T	W	T	F				
1.09	Abbott	8	8	8	8	8	a.	b.	$3.85	c.
1.010	Smythe	7¼	8¼	9	8	7	a.	b.	$4.00	c.
1.011	April	10	3	5½	7	12	a.	b.	$3.50	c.
1.012	Farmer	9	9	8	9	10	a.	b.	$4.10	c.
1.013	Jaynes	8½	9⅛	8¾	10	8	a.	b.	$3.00	c.

Calculate the paychecks of the following workers who are paid per unit (each answer, 3 points).

	Name	Units Produced					Total Units	Rate per Unit	Paycheck
		M	T	W	T	F			
1.014	Martin	10	11	15	10	8	a.	$2.13	b.
1.015	Sellers	147	151	132	117	112	a.	$0.17	b.

Calculate the paychecks of the following salespersons (each answer, 3 points).

1.016 Ann is paid a salary of $145 per week, plus a 15% commission on all sales. If she sold $425 worth of merchandise last week, what was her pay?

_____

1.017 James is paid a straight commission of 27.5% on all sales. His sales for the last six weeks are shown. Find the amount of paycheck for each week.

	Sales	Pay
Week 1	$1,200	a. _____
Week 2	$ 675	b. _____
Week 3	$1,900	c. _____
Week 4	$1,000	d. _____
Week 5	$ 400	e. _____
Week 6	$ 930	f. _____

Calculate the profit or loss of the following self-employed persons (each answer, 3 points).

1.018 Sam, a doctor, with fees of $37,500 and expenses of $45,000.

profit (or loss) _____

1.019 Jenny, who runs a bookstore, with sales of $147,000. The stock she sold cost her $98,000 and her operating expenses were $25,000.

profit (or loss) _____

87/108

Score _____

Teacher check _____
Initial Date