



• **Calculators  
at Work  
in Daily Living**

**Second Edition**

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## ● To the Teacher

*Calculators at Work in Daily Living* develops the calculator math skills that people need for success in coping with the demands of everyday life. These reality-based exercises are ideal for anyone needing to know more about how to use a basic calculator as a powerful tool for solving problems and making decisions about food, banking, shopping, travel, budgeting, and other practical concerns.

High-school students and adult learners in many settings used the first edition of *Calculators at Work in Daily Living* successfully. The purpose of this revision was to update and extend the contents and enhance the teaching support, while maintaining the features that made the first edition so well liked.

Part 1 of the book introduces basic calculators and how they work. In parts 2 through 5, each lesson or exercise targets a particular key topic or type of problem students are likely to encounter in real life. First, students see the main idea behind each problem; then they learn how a calculator can help them to solve it.

Examples in each lesson show the correct way to solve typical problems using a calculator. Practice problems and activities provide multiple opportunities to solve similar problems in different situations.

A Calculator Math Test (found in reproducible form near the end of this edition) helps you assess each learner's computational and problem-solving skills. The test includes problems based on the material in all lessons; it can be used for extra review and practice as well as for evaluation purposes.

The teacher guide pages offer support and suggestions for using each of the five major parts in the book. In addition, a complete answer key for all problems in this edition can be found at the back of the book.

● PART 2

# Math Operations in Daily Living



## ● Part 2: Math Operations in Daily Living

### Overview

This section provides opportunities for learners to succeed in using a calculator as a tool to solve everyday problems that involve the four arithmetic operations. The focus is on developing fluency with both computations and problem solving, using whole numbers and money in real-life contexts.

### Themes

- Checking accounts
- Ordering from a menu
- Calorie counting
- Catalog shopping
- Installment buying

### NCTM Principles and Standards Addressed

Number and Operations  
Data Analysis and Probability  
Problem Solving  
Connections

### Learning Goals

- Use correct calculator keying sequences to add, subtract, multiply, and divide with whole numbers and decimals (money).
- Calculate the balance in a checking account.
- Use a calculator to complete a checkbook register.
- Find the average of a group of numbers.
- Read prices from a menu and calculate the cost of a meal.
- Use data from a calorie table to determine the energy value of foods.
- Use data from a table to calculate the number of calories burned by various amounts and types of physical activity.

- Use a calculator to find the total amount of a purchase and complete a catalog order form.
- Calculate the cost of financing a purchase on an installment plan.

### Suggestions

1. Use the early exercise pages to model the correct keying sequences for each of the four operations. Direct students' attention to the calculator tips and the reminders about checking for accuracy. These features help learners to understand the operations and see how they relate to one another.
2. Exercises entitled "Checkbook Register" and "Ordering from a Catalog" are based on facsimiles of authentic forms. Ask learners to record their answers in the spaces provided, just as they would in real life.
3. Exercises entitled "The Cost of a Meal" and "The Cost of Credit" make the point that the final costs of goods and services can exceed the given prices. Students are not asked to compute any tips, taxes, or credit fees involving percentages here. However, they need to be aware that consumers should expect to pay extra for such charges.

### Technology Resources

- [Checkbooklet](#)  
At this site, the Federal Reserve Bank of Atlanta offers an informative online brochure all about checks and checking accounts: <http://www.frbatlanta.org/publica/brochure/check/check.htm>
- [Fast food facts—Food Finder](#)  
This site offers students nutritional data on specific items of their choice that are served at top fast-food restaurants: <http://www olen.com/food/>
- [The Catalog Site](#)  
This site has links to a variety of online consumer catalogs: <http://catalogsite.com>

- The Cost of Credit

The Federal Consumer Information Center offers its Consumer Handbook to Credit Protection Laws online at: [http://www.pueblo.gsa.gov/cic\\_text/money/protection-laws/cost.htm](http://www.pueblo.gsa.gov/cic_text/money/protection-laws/cost.htm)

### Extensions

1. **Payment methods.** Compare and contrast among the following payment methods: cash, checks, debit cards, credit cards. What difference does it make which method is used? Why do people pay cash for some things and write checks or use “plastic” for other purchases? Agree or disagree: We are becoming a cashless, checkless society.
2. **E-commerce.** Discuss the benefits and drawbacks of electronic banking and buying. Are they risky or safe? Do consumers who do business online set themselves up as targets for fraud? Or are they taking no more risk than when they use a credit card at a store or on the telephone?
3. **Calculating Grades.** Demonstrate to students how you calculate their average grades in your

class. Explain any special procedures you use for differentiating homework, quizzes, and tests.

4. **Calorie intake.** Have students keep a food diary and record everything they eat for a day or two. Then have them refer to a calorie chart to obtain the calorie values for those foods. Ask them to calculate their daily calorie intake. Are they surprised by the results?
5. Arrange a catalog-shopping spree. Whether students “shop” online or in mail order catalogs, give them a firm spending limit or clear goal to meet. Examples might be to pick out new furniture for a room at home, or shop for the best possible personal computer under \$1,500. (Naturally, the students should not actually place the orders!)

### Fascinating Fact to Share

One third of high school and college students carry a credit card, and 28 percent already roll over debt month to month, according to the 1999 Youth and Money Survey conducted by the Employee Benefit Research Institute and the American Savings Education Council.

## ● 6. Calculator Addition

**STUDENT ACTIVITY PAGE**

Adding numbers on the calculator is simple. You can add the numbers in any order. The sum will be the same. For example,  $10 + 5 = 15$  is the same as  $5 + 10 = 15$ .

### Adding numbers together

Press **[+]** before each new number to add. After the last number, press **[=]** to display the total.

**Example.** Add  $4 + 18 + 9$

Steps	Press	Display	
1. Clear the display.	<b>[C]</b>	0.	
2. Enter one of the numbers.	<b>[4]</b>	4.	
3. Press the add key.	<b>[+]</b>	4.	
4. Enter another number.	<b>[1]</b> <b>[8]</b>	18.	
5. Press the add key.	<b>[+]</b>	22.	← subtotal (4 + 18)
6. Enter the last number.	<b>[9]</b>	9.	
7. Press the equals key.	<b>[=]</b>	31.	← total (22 + 9)
<b>Answer:</b> <u>31</u>			

**NOTE:** Pressing **[+]** displays the subtotal so far. If you need to copy a subtotal, write it down before you enter the next number.

### Adding dollars and cents


You do not enter the \$ signs on a calculator. But you always press **[.]** to separate dollars and cents.

**Example.** Add \$6.02 and \$8.48.

**Solution:** **[C]** **[6]** **[.]** **[0]** **[2]** **[+]** **[8]** **[.]** **[4]** **[8]** **[=]** 14.5

**Answer:** \$14.50 (You must write the \$ sign and the ending 0.)

**NOTE:** The display does not show the zeroes at the end of a decimal number. Be sure to add any missing zeroes when you rewrite money answers.

(continued) 



**Calculator Addition (continued)**

**STUDENT ACTIVITY PAGE**

**Try It Yourself**

1. Use your calculator to add. Press the clear key before each new problem.

(a)  $649 + 733 =$  \_\_\_\_\_ (d)  $6 + 47 + 9 + 56 =$  \_\_\_\_\_

(b)  $5,009 + 27 =$  \_\_\_\_\_ (e)  $\$4.99 + \$7.39 =$  \_\_\_\_\_

(c)  $98 + 36 + 403 =$  \_\_\_\_\_ (f)  $\$.89 + \$3.59 + \$.13 =$  \_\_\_\_\_

2. Now do these problems.

(a) 
$$\begin{array}{r} 47 \\ + 76 \\ \hline \end{array}$$

(c) 
$$\begin{array}{r} 2,998 \\ + 8,453 \\ \hline \end{array}$$

(e) 
$$\begin{array}{r} \$16.49 \\ 9.50 \\ + .06 \\ \hline \end{array}$$

(b) 
$$\begin{array}{r} 219 \\ + 98 \\ \hline \end{array}$$

(d) 
$$\begin{array}{r} \$137,450 \\ 3,409 \\ + 25,498 \\ \hline \end{array}$$

(f) 
$$\begin{array}{r} \$23.40 \\ 7.05 \\ .29 \\ 3.77 \\ + 44.59 \\ \hline \end{array}$$

3. One school in town has 645 students. The second school has 1,047 students. The third school has 984 students. What is the total number of students?

\_\_\_\_\_ students

4. Fay's farm has 164 chickens, 28 cows, and 16 hogs. How many animals are there in all?

\_\_\_\_\_ animals

5. Linh bought a new table for \$189 and a sofa for \$399. What was the total cost?

\$ \_\_\_\_\_

**Checking for accuracy**

Add the numbers in the reverse order. The result should be the same. Use this method to check your work on this page.



## 7. Calculator Subtraction

STUDENT ACTIVITY PAGE

Use subtraction to find the difference between amounts. To subtract on the calculator, you must enter the numbers in the right order. First enter the number to subtract from. Press the subtract key  $\ominus$ . Next enter the number to subtract. Press the equals key  $\equiv$  at the end to display the difference.

**Example A.** What is  $43 - 16$ ?

Steps	Press	Display
1. Clear the display.	$\text{C}$	0.
2. Enter the number to subtract from.	$4$ $3$	43.
3. Press the subtract key.	$\ominus$	43.
4. Enter the number to subtract.	$1$ $6$	16.
5. Press the equals key.	$\equiv$	27.
<b>Answer:</b> <u>27</u>		

**Example B.** Marvin used a credit card to buy a clothes washer for \$399 and a dryer for \$289. His credit limit is \$1,000. How much credit does he have left?

**Solution:**  $\text{C}$  1000  $\ominus$  399  $\ominus$  289  $\equiv$  312

**Answer:** He has \$312 of credit left.

**NOTE:** Always begin with the number to subtract from. It usually is the largest number.

### Try It Yourself

1. Subtract using your calculator.

(a)  $80 - 63$  \_\_\_\_\_

(d)  $128 - 56 - 64$  \_\_\_\_\_

(b)  $550 - 77$  \_\_\_\_\_

(e)  $3,402 - 47 - 606$  \_\_\_\_\_

(c)  $\$730 - \$395$  \_\_\_\_\_

(f)  $\$40.01 - \$39.51$  \_\_\_\_\_

(continued)



**Calculator Subtraction (continued)**

**STUDENT ACTIVITY PAGE**

2. Now try these problems.

(a) 
$$\begin{array}{r} 824 \\ - 17 \\ \hline \end{array}$$

(c) 
$$\begin{array}{r} 9,600 \\ - 8,489 \\ \hline \end{array}$$

(e) 
$$\begin{array}{r} \$6.49 \\ - 4.64 \\ \hline \end{array}$$

(b) 
$$\begin{array}{r} \$330 \\ - 207 \\ \hline \end{array}$$

(d) 
$$\begin{array}{r} \$229,000 \\ - 45,775 \\ \hline \end{array}$$

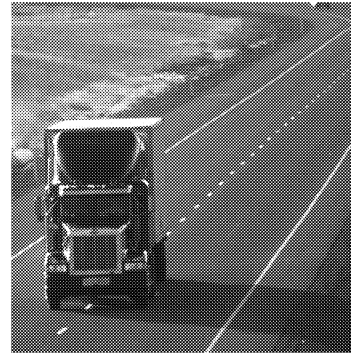
(f) 
$$\begin{array}{r} \$103.08 \\ - 93.09 \\ \hline \end{array}$$

3. Donna drove 21,300 kilometers this year. That is 1,450 kilometers more than she drove last year. How many kilometers did Donna drive last year?

\_\_\_\_\_ kilometers

4. In a city election, Nathan Muni got 43,873 votes. Sara Pim got 57,029 votes. By how many votes did Sara Pim win?

\_\_\_\_\_ votes



5. Ramon's paycheck is \$809.42. He wants to deposit \$650 of it into his bank account. How much will Ramon get back as cash?

\$ \_\_\_\_\_

**Checking for accuracy**

Use addition to "undo" the subtraction. Add back the number you just subtracted. The result should be the number that you started with. For example:

$$\boxed{C} \quad 343 \quad \boxed{-} \quad 65 \quad \boxed{=} \quad \underline{278} \quad \boxed{+} \quad 65 \quad \boxed{=} \quad \underline{343}$$

343
<u>- 65</u>
278
<u>+ 65</u>
343

Use addition to check your answers in this lesson.

# ● 14. Working with Calories

**STUDENT ACTIVITY PAGE**

Everything you eat and drink provides nutrients and energy for your body. Calories measure the food energy your body can absorb and use. When you eat food, you take in calories. When you exercise, you burn those calories for energy. Your calculator can help you work with calories.


## Counting calories

### Try It Yourself

**Directions:** Look at the table below. It shows how many calories are in some common foods. Use the data in the table to help answer the questions.

1. Calculate the total calories for:
  - (a) Breakfast \_\_\_\_\_
  - (b) Lunch \_\_\_\_\_
  - (c) Dinner \_\_\_\_\_
  - (d) All three meals: \_\_\_\_\_
  
2. Don is an active teenager. He needs about 3,600 calories every day to stay healthy.
  - (a) Will the three meals above give him the calories he needs? \_\_\_\_\_
  - (b) How many more calories will he need? \_\_\_\_\_
  
3. Maggie should take in about 2,200 calories each day.
  - (a) Will those three meals give her the calories she needs? \_\_\_\_\_
  - (b) How many more calories will she need? \_\_\_\_\_

Foods	Calories
<b>Breakfast</b>	
Raisin bran cereal (1 cup)	178
Skim milk (1 cup)	100
Toast (1 slice + margarine)	73
Banana	120
Orange juice (1 cup)	112
<b>Fast Food Lunch</b>	
Double cheeseburger	417
French fries	350
Cola (12 oz.)	150
<b>Dinner</b>	
Broiled fish (6 oz.)	198
Rice (1 cup)	186
Coleslaw ( $\frac{1}{2}$ cup)	41
Dinner roll	107
Sherbet (1 cup)	204

(continued) 

**Working with Calories (continued)**

**STUDENT ACTIVITY PAGE**

**Burning calories**

Physical activity is the main way to use food energy. Different kinds of exercise burn calories at different rates. This table shows how many calories are used in one hour of each activity. The number of calories you burn depends on how much you weigh. The more you weigh, the more calories you burn in one hour.

**Try It Yourself**

**Directions:** Use a calculator and the data in the table below to help solve the problems that follow.

<b>Calories Burned in One Hour</b>			
<b>Activity</b>	<b>100 lbs</b>	<b>150 lbs</b>	<b>200 lbs</b>
Bike riding, 6 mph	160	240	312
Jogging, 7 mph	610	920	1,230
Jumping rope	500	750	1,000
Running, 10 mph	850	1,280	1,664
Swimming, 25 yards/min	185	275	358
Tennis, singles	265	400	535
Walking, 4.5 mph	295	440	572



1. Jaime weighs 150 pounds. He played singles tennis for 2 hours.  
How many calories did he use? \_\_\_\_\_
  
2. Bettina weighs 100 pounds. She jumped rope for 30 minutes. Then she went jogging for 30 minutes. How many calories did she burn? \_\_\_\_\_
  
3. Raul weighs 200 pounds. He took in 3,420 calories.  
He rode his bike for 4 hours.
  - (a) How many calories did he use? \_\_\_\_\_
  - (b) How many calories were NOT used? \_\_\_\_\_
  
4. Helene weighs 150 pounds. She took in 2,860 calories. She spent 1 hour and 30 minutes walking.
  - (a) How many calories did she use? \_\_\_\_\_
  - (b) How many calories were NOT used? \_\_\_\_\_