PART 4
BUSINESS
MATH
APPLICATIONS

LEARNING OBJECTIVES

After completing Part 4, you will be able to use your calculator to
✓ **Convert fractions to decimals**
✓ **Calculate payroll**
✓ **Reconcile bank statements**
✓ **Solve word problems using base, rate and portion**
✓ **Compute trade and cash discounts**
✓ **Compute simple and compound interest**
✓ **Compute information necessary to analyze financial reports**

Part 4 allows you to utilize your ten-key skills to solve business math problems in the text Practical Business Math Procedures.

When solving business problems, the electronic calculator is a useful business tool. Any businessperson who manually calculates answers will be more proficient and accurate with the aid of an electronic calculator. In addition the register tape provides verification that the numbers were entered correctly.

Many problems can be solved entirely on the calculator; but some of the problems encountered will just require the use of the electronic calculator as a backup.

In part four you will find an example of each problem, how to enter the problem on the electronic calculator and practice problems to apply your skills. If additional practice is needed, please refer to your business math book.

FRACTIONS AND DECIMALS

A fraction is a way to compare numbers. It is also thought of as a numerical expression that implies division. ¾ is the same as 3 ÷ 4, or .75. In business applications you will work with both common fractions and mixed numbers. There are two types of common fractions.

✓ **Proper fractions** such as ¾, ½, or 7/8; the numerator is equal to or larger than the denominator.
✓ **Improper fractions** such as 4/4, 5/2, or 13/6; the numerator is equal to or larger than the denominator.
✓ A **mixed number** contains both a whole number and fraction such as 3 ¾.

When you are using the electronic calculator, you must convert fractions to decimal numbers. Set the decimal selector at 4 and the round-off switch at 5/4. Follow the example and apply your skills.

Example: 7/8 =

INPUT:
7 ÷ 8 =

Answer = 0.8750

Example: 6 5/8 =

INPUT:
6 M+
5 ÷
8   M+ M*

Answer = 6.6250

Apply Your Skills

1.	5/6	=	**2.**	3/4	=
3.	20/21	=	**4.**	5 2/3	=
5.	9/7	=	**6.**	2/6	=
7.	12 3/1	=	**8.**	5/6	=
9.	2/9	=	**10.**	3 4/3	=

11.	3/50	=		**12.**	2/8	=	
13.	4/5	=		**14.**	7/10	=	
15.	2/10	=		**16.**	5/9	=	
17.	21/25	=		**18.**	5/20	=	
19.	6/8	=		**20.**	3/7	=	
21.	3/8	=		**22.**	7/9	=	
23.	5/20	=		**24.**	15/25	=	

Amount of time worked is often converted from hours and minutes to decimal form. Decimal form helps calculate gross pay when employees are paid hourly. Following the example below, convert hours and minutes to decimal form. Remember to set your decimal indicator at (2).

(hint: There are 60 minutes in an hour.)

2 hr 25 min = 2.42 hrs.

INPUT:

25	÷	
60	=	M+
2	M+	MT

Answer = 2.42

Apply Your Skills

1.	5 hr 10 min	=		**2.**	10 hr 15 min	=	
3.	3 hr 40 min	=		**4.**	2 hr 26 min	=	
5.	8 hr 14 min	=		**6.**	1 hr 55 min	=	
7.	9 hr 23 min	=		**8.**	5 hr 15 min	=	
9.	6 hr 42 min	=		**10.**	3 hr 30 min	=	

PAYROLL

Gross pay is the amount of money earned before any deductions have been taken out. For hourly employees gross pay must be calculated based on the number of hours they worked. Employees who are paid by the hour are paid 1 ½ times their regular rate for overtime hours. Overtime hours are normally defined as those worked over 40 hours per week. Calculation of an individual's gross pay incorporates the addition, subtraction, percent, and memory functions.   Set the decimal selector at (2) for payroll calculations. Follow the example apply your skills.

Example: What is the gross pay for an employee earning $6.50 per hour for a 42 ½ hour week?

INPUT:

40	×	**Answer 284.38**
6.50	M+	
42.5	+	
40	– ×	
6.5	×	
1.5	M+ M*	

Apply Your Skills.

Emp.	Hours worked	Pay Rate	Gross Pay
A.	45	$7.50	
B.	30	$8.00	
C.	50	$6.50	
D.	40	$7.00	
E.	40	$9.75	
F.	42.25	$8.75	
G.	39	$6.85	
H.	46	$5.50	

Complete the following Business Application.

Emp #	Hours Worked M TU W TH F	Hourly Rate	Wage Regular	Overtime	Gross Earnings
10	8 5 8 8 8	$ 6.10			
11	8 11 10 10 8	$ 9.00			
12	9 9 9 9 9	$ 7.75			
13	10 8 10 8 8	$ 8.00			
14	8 10 10 8 9	$ 8.50			

Example: What is the gross pay of a production worker who is paid on a differential pay scale? He produced 200 pieces this week.

Note: Different levels of production causes different rates of pay per item.

UNITS	AMOUNT
1-50	.32
51-150	.45
151-200	.50
OVER 200	.95

INPUT:	ANSWER 86.00
50	×
.32	M+
100	×
.45	M+
50	×
.50	M+
	M*

Apply Your Skills

Emp. #	Units	Gross Pay		Emp.#	Units	Gross Pay
I.	55	_____		M.	305	
J.	175	_____		N.	245	
K.	300	_____		O.	186	
L.	225	_____		P.	45	

Example: What is the gross salary of an employee who receives a base salary of $1,000 plus commission of 3% on sales over $5,000. His total gross sales were $55,000. Set the decimal selector at two (2).

INPUT:
1000	M+
50,000	×
3 %	M+ M*

ANSWER $2,500.00

Complete the following business applications. Sales Representatives earn 2% of sales over $10,000.

Employee	Sales	Base Pay	Bonus	Gross Salary
M.	$60,000	$1,000	_____	
N.	$85,000	$1,500	_____	
O.	$25,000	$1,200	_____	
P.	$40,000	$1,300	_____	
Q.	$55,000	$1,500	_____	
R.	$35,500	$1,000	_____	
S.	$10,000	$1,100	_____	
T.	$15,200	$1,200	_____	
U.	$18,000	$1,000	_____	
V.	$90,000	$2,000	_____	
W.	$78,800	$1,900	_____	
X.	$44,450	$1,330	_____	

CHECKING ACCOUNTS AND BANK RECONCILIATION

Some of the regular duties in an office is to maintain accurate records of receipts and payments and to reconcile the monthly bank statement. When adding and subtracting money, set the decimal selector at the add mode (+). The decimal point is automatically input at two decimal places. Follow the example and apply your skills.

Example: Bank Statement Balance $10,625.43
                 Deposits in transit   865.25
                 Checks Outstanding   3,762.41

INPUT: **ANSWER $7,730.77**
1062543   +
86525   +
376241   –   *

Deposits in transit:	Deposits that were made too late to be included on the current bank statement. These deposits should be added to the balance on the bank statement.
Outstanding checks:	Checks that were written and recorded in your checkbook but have not yet been paid by the bank. These checks should be subtracted from the balance on the bank statement.
Bank service charges:	Bank charges appear on your monthly bank statement and may be for different situations. Service charges are deducted from your checkbook balance.
Interest charges:	Interest earned on checking accounts will appear on your bank statement. This amount should be added to your checkbook balance.
NSF checks:	Checks that you deposited but cannot be paid to your account because the party who wrote the check did not have the money in their account. (Returned or rejected checks)

Apply Your Skills.

1. You received your bank statement today showing a balance of $977.77. The bank statement showed a service charge of $1.25. After comparing the checks you wrote and deposits you made; you noticed the following: Check # 530 for $73.75, Check #533 for $19.07 and Check # 538 for $113.05 were outstanding with the bank. The last deposit you made for $347.50 did not show on the bank statement. Your current checkbook balance is $1,120.65.

Prepare a bank statement reconciliation.

Bank Reconciliation Form	
Bank Statement Balance $	**Checkbook balance $**
Add: Deposits in transit: $	Add: interest charges $
$	
$	Deduct: service charges $
Total Deposit in transit +$	Deduct: N.S.F. Checks:
Deduct: Outstanding Checks	
Check #_____ Amount $	
Check #_____ Amount $	
Check #_____ Amount $	
Total outstanding checks $	
Adjusted Bank Balance $	**Adjusted Checkbook: $** **Balance**

2. You received your bank statement today showing a balance of $728.56. The bank statement showed a service charge of $5.20. After comparing the checks you wrote and deposits you made; you noticed the following: Check # 297 for $35.00 and check #299 for $17.50 were outstanding with the bank. The last deposit you made for $50.00 did not show on the bank statement. Your current checkbook balance is $731.26.

Prepare a bank statement reconciliation.

Bank Reconciliation Form	
Bank Statement Balance $	**Checkbook balance $**
Add: Deposits in transit: $	Add: interest charges $
$	
$	Deduct: service charges $
Total Deposit in transit +$	Deduct: N.S.F. Checks:
Deduct: Outstanding Checks	
Check #_____ Amount $	
Check #_____ Amount $	
Check #_____ Amount $	
Total outstanding checks $	
Adjusted Bank Balance $	**Adjusted Checkbook: $** **Balance**

3. You received your bank statement today showing a balance of $979.19. The bank statement showed a service charge of $1.90. After comparing the checks you wrote and deposits you made; you noticed the following: Check # 489 for $20.10, Check #499 for $15.00, and Check #500 for $8.00 were outstanding with the bank. The last two deposits you made for $33.00 and $135.00 did not show on the bank statement. Your current checkbook balance is $1,105.99.

Prepare a bank statement reconciliation.

Bank Reconciliation Form	
Bank Statement Balance $	**Checkbook balance $**
Add: Deposits in transit: $	Add: interest charges $
$	
$	Deduct: service charges $
Total Deposit in transit +$	Deduct: N.S.F. Checks:
Deduct: Outstanding Checks	
Check #_____ Amount $	
Check #_____ Amount $	
Check #_____ Amount $	
Total outstanding checks $	
Adjusted Bank Balance $	**Adjusted Checkbook: $** **Balance**

A percent compares an amount with a base. A percent means parts out of 100. The percent is expressed as a rate. For example, 3% commission of $5,000 in sales is $150.00. Percentages express a relationship between one amount to another.

The base is the amount that the rate is applied to. The base is always = 100%. Multiplying $5,000(base) x 3%(rate) will give you the portion such as the amount of commission earned ($150.00.)

Note: The number after the word **"of"** represents the base.
        The word "percent" or the percent sign (%) represents the rate.
Set the decimal selector at (2). Follow the example and apply your skills.

PERCENTS AND THEIR APPLICATIONS

Example 1: (finding the portion)   What is 22% of 300?
                $(B \times R) = P$ **Base x Rate = Portion**

INPUT:

22   x
300   %

ANSWER 66.00

Example 2:   (finding the percent) $66.00 is what percent of $300?
$(P \div B) = R$ **Portion ÷ Base = Rate**

INPUT:
66   ÷
300   %

ANSWER 22.00

Example 3:   (finding the base) $66.00 is 22% of what number?
$(P \div R) = B$ **Portion ÷ Rate = Base**

INPUT:
66   ÷
22   %

ANSWER 300.00

Apply Your Skills.

1.   What is 25% of $125.65?

2.   5% of $322.50 is_____?

3. $30.00 is 12% of what number?

4.   What is 18% of $898.50?

5.   What is 6 1/4% of 144?

6.   What is 48% of $120?

7. $130.00 is what percent of $400.00?

8. $155.00 is what percent of $575.00?

9.   What percent is $80.00 of $240.00?

10.   What percent is $95.00 of $775.00?

11. $25.01 is what percent of $38.38?

12. $10.00 is what percent of $120.00?

13.   50 is what percent of 30?

14.   What is 4.6% of $810?

15. $10.10 is what percent of $26.65?

16.   What is 22.6% of $628?

17.   What is 5.5% of $255.54?

In each of the following problems decide whether you are looking for the portion, base, or rate.

Apply your skills to solve the problems.

18.   If you would like to invest 20% of your $1,500.00 monthly salary into your work 401K plan; how much should you invest?

19.   You spent $125.00 out of your $900.00 budget on groceries. What percent of your budget did you spend?

20.   You decide that 18% of your $3,000 total savings you will spend on vacation this year. How much money will you take?

PERCENT OF CHANGE

Businesses often need to compare amounts such as the change in sales, profit or expenses from one year to another. The amount and percentage of change can help the business's progress or projection for future years.

To find out what the percent of change is from the original; first find the difference between the original and the price. Then calculate this amount as a percent of the original. Set the decimal selector at (2). Follow the example and apply your skills.

Example: The new price on the Pentium III laptop computer is $2,400. The price of the Pentium II was $1,800. What is the percentage of change?

INPUT:
2400   +
1800   − ÷
1800   %

ANSWER 33.34%

The result is a 33% increase in product cost from last year.

Apply Your Skills.

New Price	Original Price	Amount of Change	Percent of Change
$ 2.55	2.00	_____	
$ 18.00	15.00	_____	
$ 25.50	24.75	_____	
$ 13.87	12.25	_____	
$ 20.00	25.00	_____	
$ 3.87	3.50	_____	
$ 11.75	11.00	_____	

SINGLE AND CHAIN TRADE DISCOUNTS

A **trade discount** is the amount that retailers receive off the list price. The **list price** is the suggested retail price from the manufacturer or wholesaler. The list price minus the trade discount gives you the net price the retailer pays. Many businesses offer more than one trade discount. This type of discount is known as a **series** or **chain discount**. The seller lists the chain discount as a group or series (ex: 20/10/5). This does not mean the retailer will get 35% trade discount; it means 20% off the list price, 10% off the new balance, and 5% off the next new balance. Set the decimal selector at (2). Follow the examples below and apply your skills.

Example 1: A printer lists for $400. The wholesaler offers a trade discount of 35%. What is the net price?

INPUT:
400   x
35   % –
ANSWER $260.00

Example 2: A printer lists for $400. The wholesale offers a chain trade discount of 20/10/5. What is the net price?

INPUT:
400   x
20   % –   x
10   % –   x
5   % –

ANSWER $273.60

Apply Your Skills. (Set your decimal selector at 2.)

List Price	Discount	Net Price
$725.80	25%	
616.50	20%	
500.00	20/10	
250.00	10/10/5	
300.00	10/5/5	
225.00	15%	
150.00	5/5/5	

CASH DISCOUNTS

A cash discount gives the buyer an incentive to pay an invoice promptly. A cash discount is offered under terms or conditions. On the invoice the specific terms will be spelled out. For example, if terms are **2/10, N/30**, this means that a 2% discount can be taken off the invoice amount if paid within 10 days; otherwise the full amount of the invoice without discount is due within 30 days. Terms of an invoice are stated in a variety of ways. Here are a few examples. **5/10 ROG, N/30**-means that a 5% discount can be taken if invoice is paid within 10 days after the receipt of the goods (ROG). **2/10, EOM**-means that a 2% discount may be taken for payment within the first 10 days of the month following the sale.   Refer to your math book for additional examples. Set the decimal selector at (2). Follow the example below and apply your skills.

Example: An invoice dated 3/1/xx for $500.00 has terms of 2/10, N/30. If payment is made on 3/9/xx, what amount should be paid?

INPUT:

500   x

2   %   –

ANSWER 490.00

The bill was paid within 10 days; therefore a 2% discount was taken off the invoice price.

Apply Your Skills.

Date of Invoice	Invoice Amount	Terms	Payment Date	Amount Paid
3/01/xx	322.50	2/10, N/30	3/15/xx	
2/15/xx	150.00	3/10, N/30	2/24/xx	
4/20/xx	550.25	1/10, N/30	4/28/xx	
5/10/xx	175.25	2/10 EOM, N/45	8/29/xx	
5/15/xx	210.00	3/10 EOM, N/30	5/31/xx	
6/02/xx	25.00	1/10 ROG, N/30	6/12/xx	
1/12/xx	125.25	2/15, N/30	1/31/xx	

MARKUPS

> Retailers buy merchandise at cost and sell it at a higher price. The difference between the cost and the sale price is called the markup. Depending upon the method of accounting a company uses, markups can be calculated on cost or on selling price. To calculate the selling price the cost is multiplied by the markup percentage and added to the cost to get the sales price. Markup this way is based on cost. Follow the example and apply your skills. Set the decimal selector at (2).

Example: Shirts cost $3.00 each and the markup is 52% on cost. What is the $ amount of the markup, and what is the selling price?

INPUT:

3   x

52   %   +

ANSWER $4.56

Example: If tennis rackets cost $55 and a 40% markup must be realized, what is the dollar amount of the markup, and what is the selling price?

INPUT:
55   x
40   %   +

ANSWER $77.00

Apply Your Skills.

Cost	Markup Rate	$ Amount Markup	Sales Price
$80.00	35%	$28.00	$108.00
75.00	50%	____	
25.00	100%	____	
45.00	15%	____	
10.50	80%	____	
16.25	36%	____	____
7.00	33.3%	____	

MARKDOWNS

Retailers often put items on sale. The difference between the regular selling price and the reduced sales price is called the markdown. A markdown is a reduction from the regular selling price of an item. To find the markdown amount, multiply the regular sales price by the markdown percentage.   Follow the example and apply your skills.
Set the decimal selector at (2).

Example: A shirt retails for $4.56. This weekend the store is having an anniversary sale and all shirts will sell for 20% off the retail price. What is the markdown amount and new selling price?

INPUT

4.56   x

20   %   −

ANSWER $3.65

Apply Your Skills

Regular Price	Markdown %	Markdown $	Reduced Price
350.65	20%	_____	
161.50	10%	_____	
180.00	33%	_____	
200.00	25%	_____	
293.83	15%	_____	
500.00	50%	_____	
299.99	33%	_____	
19.99	33.3%	_____	
89.99	20%	_____	

INSTALLMENT BUYING

Installments are partial payments made towards a fixed dollar amount owed. Payments are on a scheduled payment plan, usually monthly. Buyers purchase large ticket items such as cars, boats, jewelry, furs, furniture, etc., on an installment plan.

The **installment price** is the sum of the initial down payment and the monthly installments. The amount paid in each installment represents a loan from the seller and the seller's interest.
The **installment charge** or **finance charge** is the seller's fee for making the loan. The buyer should know what percent of interest the installment charge represents. The smaller the better.
To calculate the **installment price**, you will need to know **(a)** the sales price, **(b)** down payment required, **(c)** number of installments, and **(d)** amount of installments.
To calculate the **percent of interest** on the installment you will need to know **(a)** the installment price, **(b)** the installment charge, and **(c)** the sales price.
Set the decimal selector at (2). Follow the example and apply your skills.

Example: Cathy is going to buy a boat. The price is $12,000 and Cathy is going to finance her purchase with the boat dealership. A down payment of $1,200 is required and there are 48 monthly payments of $265. Calculate her installment price, installment charge, and finance charge.

Installment Price =   Down Payment + # of Installments × Each Installment
$13,920 $1,200   +   (48   × $265.00)

Installment Charge = Installment Price   –   List Price
$1,920 $13,920.00   – $12,000.00

Finance Charge =   Installment Charge ÷ Sales Price
16% $1,920.00   ÷ $12,000

INPUT:
1200   M+
48   x
265   M+   M*   +
12000   –   ÷
12000   %

Apply Your Skills:

For each problem calculate installment price, installment charge, & finance charge.

1.   A television sells for $179.99. It may be bought on installment plan with a down payment of $35.00 and 10 equal installments of $18.00.

2.   An oak desk sells for $449.50. It may be bought on installment plan with a down payment of $50.00 and 30 equal installments of $17.00.

3.   A stereo system sells for $1,000. It may be bought on installment plan with a down payment of $150.00 and 10 equal installments of $100.00.

4.   A Casio Digital Sampler Keyboard sells for $2,500. It may be bought on installment plan with a down payment of $500.00 and 24 equal installments of $120.00.

5.   A college is advertising an education program in the accounting field for a total cost of $6,375.00. It may be financed on the installment plan through the school with a down payment of $300.00 and 24 equal installments of $300.00.

6.   A Pentium MMX laptop computer (latest toy out) sells for $2,800. It may be bought on installment plan with a down payment of $280.00 and 12 equal installments of $250.00.

7.   Jeannine's Jack of All Trades Shop is planning to purchase a new truck. The sale price of the truck is $3,000 and the owner is willing to finance the truck through an installment plan with a 20% down payment and 12 monthly installments of $225.00.

SIMPLE INTEREST

Interest is the amount a lender charges a borrower for use of money. Interest = Principal times Rate times Time **(I= P × R × T)**. **Principal** stands for the amount of money borrowed. **Rate** stands for the interest rate per year (APR). **Time** stands for the period of time for which the money was borrowed. Time can be expressed in years or days. Bankers' days are 360 and calendar days are 365. If time is less than one year it is expressed as a fraction. Fractions are indicated division and can be entered directly into the electronic calculator for computation. Simple interest is calculated on the original amount of the loan using multiplication and division. Set the decimal selector at (2). Follow the example and apply your skills.

Example: What is the interest charged for $1,500 at 8% for 100 days using Bankers Rule?
              $1,500 × 8\% × 100/360 =$

INPUT:

1,500	X
8 %	X
100	÷
360	=

ANSWER 33.33

Apply Your Skills *(use Bankers Days)*

Amount of Loan	Annual Interest Rate	Days Borrowed	Interest Charged
37,500	10%	90	
18,000	12%	120	
50,000	9%	180	
35,000	10%	150	
16,000	14%	200	
75,000	7%	300	
25,000	11%	360	

FINDING THE DUE DATE

Loan due dates may be expressed in days, months, or years. When a due date is expressed in days you must compute the exact due date based on the number of days involved in each month.

When counting days remember to exclude the first date but include the last date. (Example: Loan dated March 15 due in 30 days will be due on April 14)
If the due date is expressed in months, the due date will be the same day of the month as the date of the loan. (Example: Loan dated March 15 due in one month will be due on April 15)
Set the decimal selector at (0). Follow the example and apply your skills.

Example: A loan dated December 10, 20xx due in 90 days.

December has	31 days
Loan Date December	−10
	+21 days used in December
January has	+31 days
February has	+28 days (not a leap year)
Loan due on March	+10 (brings you to 90 days)
	90 days

Exact day loan due March 10, 20xx

Apply Your Skills

LOAN SCHEDULE		
Date Loan Originated	**Time**	**Due Date**
January 4, 2011	60 days	
April 29, 2011	45 days	
February 28, 2011	1 month	
November 16, 2011	30 days	
July 6, 2011	90 days	
March 1, 2011	1 year	
May 9, 2011	3 months	

REVOLVING CHARGE ACCOUNTS

Revolving charge accounts are a convenient way to lend you money. The Businesses establish a credit line based on certain criteria. They charge interest (finance charges) on balances not paid by the due date.   When payments are made (if not paid in full) the payment is applied first, to the interest, and then to the balance of your purchase. To begin, you purchased $120.00 of merchandise on credit. You planned to make $30.00 payments until it was paid off. The department store charges 1 1/2% interest on the previous month's balance. Your first payment pays for the first month's interest **($120 × 1.5% = $1.80)**. This leaves $28.20 of your $30.00 payment to be applied towards the balance **($120 – 28.20 = $91.80)**. You will continue to calculate in the same manner until the balance is zero. Set the decimal selector at 2. Follow the example and apply your skills.

Example: You have a revolving charge account at May Co. Department store. You purchase a MP12D electronic calculator on credit for $30.00. The monthly finance charge is 1 ½%. What is the balance due at the end of the month (includes finance charge and is compounded from date of purchase)?

INPUT:
30   x
1.5   %   +

ANSWER
Balance due is $30.45.

Charge Account Balance	1 1/2% Monthly Finance Charge	Balance plus finance charge
75.00	_____	
80.00	_____	
65.50	_____	
39.99	_____	

Prior to preparing financial reports, the accountant will accumulate the financial data for the company's annual period onto a work sheet. This can be done manually or with the aid of a computer, using a computer software package.

If all of the numeric data is input accurately, then the machine will provide the correct totals. The work sheet must be prepared as quickly as possible so that the financial reports are available. There are people both inside and outside of the company who need to analyze these financial reports. Set the decimal selector at (2). Follow the example and apply your skills.

FINANCIAL REPORTS

AUTOMATED ACCOUNTING SERVICES
COMPARATIVE BALANCE SHEET
DECEMBER 31, 20X1, AND 20X2

	20x	20x
Current Assets		
Cash	10,000	12,000
Accounts Receivable	3,500	3,000
Computer Supplies	1,200	1,100
Office Supplies	800	900
Prepaid Insurance	3,600	4,200
Total Assets	19,100	21,200

Example: The vertical analysis of a balance sheet involves calculating each asset as a percentage of total assets. *(in chain division, it is the second amount entered that becomes the constant.)* What percentage is inventory to total assets?

INPUT:
| 1200 | ÷ |
| 19100 | % |

ANSWER 6.28%

Example: Horizontal analysis can be made when you have the balance sheet from more than one period. Computer Supplies in the first year (20x1) was $1,200 and in the second year (20x2) 1,100. Determine the dollar amount of increase or decrease and then the percent of change. 20x1 is the base year.

INPUT:
1100   +
1200   –   *   ÷
1200   %

ANSWER
Amount of decrease $100.00
Percent of Change –8.33%

Apply Your Skills:

Complete a vertical analysis and horizontal analysis of the balance sheet. *(use the chain division function when applicable and round your percentages to whole numbers)*

| | | | % of Total Assets | | $ amount | % of increase or |
			x1	x2	of change	(decrease)
AUTOMATED ACCOUNTING SERVICES **COMPARATIVE BALANCE SHEET** **DECEMBER 31, 20X1, AND 20X2**						
CURRENT ASSETS:	**20X1**	**20X2**				
Cash	$10,000	$12,000				
Accounts Receivable	3,500	3,000				
Computer Supplies	1,200	1,100				
Office Supplies	800	900				
Prepaid Insurance	3,600	4,200				
Total Assets:	19,100	21,200				

DEPRECIATION

When an asset has a useful life of one year or less, the cost of the asset is deducted by the business as an expense. If the asset has a useful life for more than one year (building, machinery, furniture, etc.), the cost of the asset is distributed over the life of the asset. This cost is called depreciation. There are many accepted methods of depreciation. Four of the most common methods are: straight-line, double declining balance, sum-of-the-years' digits, and units of production. Set the decimal selector at 2. Follow the example and apply your skills.
For other examples of depreciation method please refer to your Business Math book.

Straight Line Depreciation Method- The straight-line method depreciates the cost of an asset equally over the estimated life of the asset. It is the easiest method of depreciation to compute.

Annual Depreciation =
$$\frac{\text{original cost} - \text{salvage value}}{\text{useful life}}$$

Example: A trucking company bought a truck that cost $16,000. The company estimates the trucks useful life to be five years. After five years the truck has a salvage value of $1,000. What will be the depreciation expense for the truck?

INPUT:

16000	+	
1000	–	÷
5	=	

ANSWER $3,000.00

Apply Your Skills.

DEPRECIATION TABLE			
Original Cost	**Useful Life**	**Salvage Value**	**Annual Depreciation Expense**
$2,000.00	5 years	$500.00	
3,000.00	3 years	100.00	
1,500.00	3 years	00.00	
8,000.00	4 years	250.00	
9,000.00	7 years	300.00	

INVENTORY

There are two systems for keeping track of inventory, perpetual and periodic. In the perpetual system you have a constant updated count of what goods are in inventory at all times. Goods are added in when purchases are made, and with each sale, the goods are deducted from inventory.

On the other hand, many stores use the periodic system that requires that at the end of a period of time (at least once a year), a physical count of inventory be taken. This is done to **(a)** calculate the cost of the ending inventory (found on the balance sheet) and **(b)** calculate the cost of the goods sold (found on the income statement).

Depending on assumptions that a business makes concerning which inventory is sold first, different cost will be assigned to ending inventory.

There are four ways to calculate the cost of ending inventory. **1.** First-In First-Out (FIFO), **2**. Last-In Last-Out (LIFO); **3**. Weighted-Average Method; and **4**. Actual Cost. Set the decimal selector at (2). Follow the example and apply your skills.

Example: Underwood Aerobics Gear has a beginning inventory of 20 gym bags that cost $160. During the year, Underwood Aerobics made additional purchases. *(Note with inflation how the cost rose from $9 to $13 per gym bag)* At the end of the year, 24 gym bags were unsold. The company had a total of 60 gym bags available to sell during the year. Underwood wants to calculate a cost of ending inventory.

UNDERWOOD AEROBICS GEAR			
INVENTORY	**# of units**	**cost per unit**	**Total Cost**
Beginning Inventory	20	$8.00	$160.00
First purchase (April 1)	10	9.00	90.00
Second purchase (May 1)	10	10.00	100.00
Third purchase (Oct. 1)	10	12.00	120.00
Forth purchase (Dec. 1)	<u>10</u>	13.00	130.00
Total Merchandise Available for sale	60		$600.00
Merchandise Sold	<u>36</u>		
Merchandise in Ending Inventory	24		

<u>Weighted Average Method</u>

<u>INPUT:</u>
600	÷	
60	=	x
24	=	

ANSWER 240.00

<u>FIFO Method</u>

<u>INPUT:</u>
10	x	
13	M+	
10	x	
12	M+	
4		x
10	M+	M*

ANSWER 290.00

<u>LIFO Method</u>

<u>INPUT:</u>
20	x	
8	M+	
4	x	
9	M+	M*

ANSWER 196.00

<u>Apply Your Skills:</u>

The LEAD Company has a beginning inventory of 5 Motivational Tapes with an inventory cost of $4.00 each. During the year the company made three purchases of additional tapes. The first purchase was 5 tapes @ $5.00, the second purchase was 6 tapes @ $6.00, and the third purchase was 3 tapes @ $9.00. At the end of the year Mr. Lead had 6 tapes in inventory. Calculate the cost of the ending inventory using FIFO, LIFO, and the Weighted Average method.

FIFO

LIFO

WEIGHTED AVERAGE