The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

BUSINESS MATHEMATICS

Tuesday, June 16, 1987 — 1:15 to 4:15 p.m., only

There are two parts to this examination. Part I is worth 60 credits and Part II is worth 40 credits. You may use scrap paper and you may write in the examination booklet, but you must record the answers to the questions in this examination in the separate answer booklet. Use pen to write in the answer booklet. Be sure to fill in the heading of your answer booklet.

When you have completed the examination, you must sign the statement printed at the end of the answer booklet, indicating that you had no unlawful knowledge of the questions or answers prior to the examination and that you have neither given nor received assistance in answering any of the questions during the examination. Your answer booklet cannot be accepted if you fail to sign the declaration.
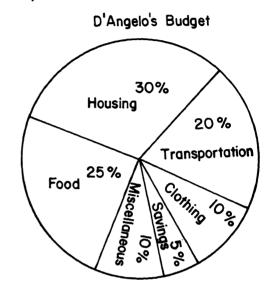
DO NOT OPEN THIS EXAMINATION BOOKLET UNTIL THE SIGNAL IS GIVEN

Part I

Directions (1–34): Answer any *30* of the 34 questions in this part. Scrap paper may be used. Write only your answers in the separate answer booklet. No partial credit will be allowed.   [60]

1 Subtract: $8\frac{7}{9} - 5\frac{2}{3}$

2 What is the cost of 360 bushels of squash at $4.81 per bushel?

3 What is the cost of 4 ounces of candy that sells at $2.40 per pound?

4 Under Johnson's medical insurance plan, she must pay the first $100 for annual medical expenses. Her insurance company will then pay 90% of the balance. If Johnson's medical bills for the year total $560, how much should the insurance company pay?

5 Norton has New York State taxable income of $17,500. According to the tax rate schedule, he must pay $1,060 plus 11% of the excess over $17,000. What is Norton's tax?

6 On August 15, Peppe received his school tax bill for $775.50. A 4% collection charge was to be added to the bill if it was not paid by September 30. On October 16, Peppe paid his school tax bill and the collection charge. What was the total amount of his payment?

7 Richman had automobile collision insurance with a $150 deductible clause. A recent collision resulted in damages to her car which cost $839.75 to repair. How much of this amount would be paid by the insurance company?

8 Anderson can buy an electronic typewriter on the installment plan at a total cost of $575. He makes a downpayment of $125. If the balance is to be paid in equal monthly installments of $25 each, how many months will it take him to pay for the typewriter?

9 Based on the graph below, what amount of money should D'Angelo spend for food if his weekly net income is $236?

D'Angelo's Budget

10 On June 5, the D & L Manufacturing Company ordered goods with terms 3/10, 1/20, n/30. What is the percent of the discount given if the invoice is paid on June 12?

11 A used car cost $3,800. After four years of use, it had a trade-in value of $600. What was the amount of the average annual depreciation on this car?

12 Tellis sells craft kits at $3.75 each. Her competitor sells the same kit for $4.00 less a 15% discount. By what amount must Tellis reduce her price to meet the price of her competitor?

13 Five chairs can be manufactured for the following costs: raw materials, $750; labor, $375; overhead, $150. What would be the cost to manufacture one chair?

14 An air-conditioner which usually sells for $240 is reduced to $192. What is the percent of discount offered?

15 Curro and Fitzgerald are partners in a small business and have agreed to share their net profits in a ratio of 3 to 2, respectively. How much should Fitzgerald receive from net profits of $5,000?

16 A manufacturer calculates that the storage area uses 37½% of the space of the building. If the annual rent for the building is $40,000, what is the amount paid for the storage area?

17 Rogers works 40 hours a week at the rate of $5.50 per hour. If the current social security tax rate is 7.15%, how much is deducted from his pay each week for social security?

18 Chu wants to send a 10-pound package to a friend 200 miles away. She has the choice of the following two methods:

Method 1: By bus at a rate of $.135 per pound
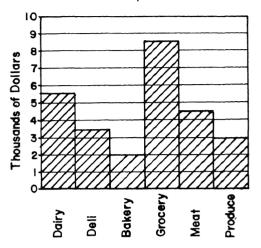Method 2: By parcel post according to the rate table shown below

Zones

Weight 1 pound and not exceeding (pounds)	Local	1 & 2	3	4
		Up to 150 miles	150 to 300 miles	300 to 600 miles
9	$1.54	$1.85	$2.03	$2.29
10	1.57	1.89	2.10	2.39
11	1.60	1.94	2.17	2.50

How much will she save by sending the package by the less expensive method?

19 The Walker Corporation has the following assets: $60,000 cash, $45,000 accounts receivable, $150,500 merchandise inventory, $92,750 building, and $27,600 equipment. The corporation owes Fischer Company $10,000 and Morton Wholesale $35,000. What is the net worth (capital) of the Walker Corporation?

20 Adams, a salesperson for a real estate agency, sold a piece of property for $51,500. The agency's commission is 6% of the selling price and Adams is paid 40% of the agency's commission. What amount of the commission did Adams receive for selling the property?

21 Based on the graph below, what was the difference between the monthly sales of the grocery department and the meat department?

Quality Food Mart Sales
Month of April 1987

22 A man has been earning $3.60 per hour and working 40 hours per week. What hourly wage would he have to earn in order to have the same weekly wage if his work week is reduced to 36 hours?

23 Merriam, a car salesman, earns a salary of $50 per week, plus a 5% commission on all sales. Last week he sold three cars at $1,395, $2,500, and $7,350, respectively. What were Merriam's total earnings for the week?

24 Last week Pollock's gross earnings totaled $240.80. She had the following deductions:

Federal income tax $29.00
State income tax 9.40
FICA tax 17.22
Insurance premiums 12.00
Union dues 20.00

What was her net pay for the week?

25 A community sold $6,000,000 worth of bonds to finance a new water system. The bonds paid interest at the rate of 5¼% per year. What is the total cost of interest per year on these bonds?

26 What is the interest on $900 for 30 days at 12%?

27 Murray purchased 6 bonds quoted at 85 with a par value of $1,000 each. If the broker charged $45 total commission, what total amount did Murray pay for the 6 bonds?

28 Preston invested $3,000 in a mutual fund and received 240 shares. One year later, she sold these shares for $14.35 each. What was Preston's profit on this investment?

29 Harris borrowed money on August 2, 1986, and repaid the loan on January 6, 1987. How many days did he have the loan?

30 Pachuki must write checks for $145.00, $231.80, and $121.50. Her current checking account balance is $86.44. What is the smallest amount she must deposit in order to write these checks without overdrawing her checking account?

31 An investor owns 60 shares of stock that pay a quarterly dividend of $.50 per share. What is her total yearly dividend?

32 A promissory note dated May 15 is due 3 months later. What is the date of maturity?

33 The checkbook balance of Ryan's Market was $2,166.34 on February 1. The bank statement showed a service charge of $8.40 and a check for $83.50 that Ryan forgot to subtract on his check stub. What was the correct checkbook balance?

34 The Harpers obtained a $50,000 mortgage loan to buy a home. They are required to make monthly payments of $575 for 20 years. What is the total amount of interest they will pay on this loan?

Part II

Directions (1–13): Answer any *10* of the 13 questions in this part. All work must be shown in the answer booklet. Partial credit may be allowed.   [40]

1 Dawson wants to buy two pieces of property: a house which is priced at $57,000 and a lot which is priced at $5,000. Closing costs will amount to 3% of the total cost. If Dawson has $15,000, how much must she borrow to buy these two pieces of property?

2 Smith used the following information to fill out a 1040EZ Federal Income Tax Form:

Income:

Wages $6,510.00
Interest 95.00

Deductions:

25% of the $200 he contributed to charity
$1,080 for his personal exemption

What was Smith's taxable income for the year?

3 Weston purchased 3 shirts at $15.00 each. If the sales tax was 8%, how much change did she receive from a $50 bill?

4 The A & C Market is offering dish detergent at a special price: buy one at the regular cost and get one at half-price. The regular cost of each bottle is $.90. How much will a customer pay if 6 bottles are purchased?

5 McNamara can lease a luxury car for $420 a month. She can lease an economy car for $190 a month. How much more would it cost to lease the luxury car instead of the economy car for two years?

6 What is the cost of 4 tires if each tire costs $65, less a discount of 20%, plus 7% sales tax?

7 Salisbury operates a vegetable stand. Last season, sales were $3,500 in July, $4,300 in August, and $1,700 in September. He spent $1,750 on seeds and fertilizer. Labor and other costs averaged $250 a week for the 10 weeks he was in business. If taxes on his gross profit were $925, what was Salisbury's net profit for the season?

8 A home computer has a cash price of $950. Sherman agrees to buy it on the installment plan, with a downpayment of $350 and a 10% finance charge on the balance. If he agrees to make 12 equal monthly payments to finish paying for the computer, what will be the amount of each payment?

9 The Leathercraft Shop received an invoice for $192.00, dated August 27, with terms of 3/10, 2/20, n/30. How much should Leathercraft pay if the invoice is paid on September 15?

10 Marrano Brothers, Inc., pays its workers a salary of $30 per day, plus $1.75 for each piece completed and accepted. Jahnel completed the following number of pieces last week: Monday, 26; Tuesday, 28; Wednesday, 32; Thursday, 30; and Friday, 29. If 5 pieces were not accepted, what was Jahnel's pay for the week?

11 Brown earns $8.00 an hour for a 40-hour week, with time and a half for any hours worked over 40. Last week she worked the following hours:

Monday 10
Tuesday 6
Wednesday 10
Thursday 8
Friday 8
Saturday 4

What were her gross earnings for the week?

12 The cost of work Davis produces is charged to individual accounts. Using the chart below, calculate the amount that should be charged to the Ruiz account if the work Davis completed this week on the Ruiz account consisted of 6 memos, 8 letters, 2 six-page reports, and a 14-page report.

Item Completed	Cost Per Item
Memo	$ 4.60
Letter	8.50
Report 1-10 pages	23.00
Report 11-15 pages	35.00

13 Morgan, a salesman, receives an 8% commission on the first $3,500 of monthly sales. On monthly sales in excess of $3,500, he receives a commission of 11%. His sales last month were $6,900. What were his total earnings for the month?

FOR TEACHERS ONLY

BUSINESS MATHEMATICS

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SCORING KEY AND RATING GUIDE

Mechanics of Rating

BM

Note: Do *not* refer to the *Guide for Rating Regents Examinations and Competency Tests in Business Subjects*, (1974 edition), when rating student answer papers for this examination.

The following procedures are recommended for rating Regents examination papers in business mathematics.

(1) Use only *red* ink or *red* pencil in rating papers. Do not correct the student's work by making insertions or changes of any kind.

(2) For Part I, indicate by means of a checkmark (√) each incorrect or omitted answer; do not place a checkmark beside a correct answer. Record the total number of credits allowed for Part I in the appropriate space in the box on the cover of the answer booklet.

(3) For Part II, circle each error and indicate the number of credits deducted. At the end of each Part II problem, indicate the number of credits allowed for that problem by a plus score and the number of credits deducted by a minus score.

(4) At the end of Part II, indicate the total number of credits allowed and the total number of credits deducted for all of Part II. Record the total number of credits allowed for Part II in the appropriate space in the box on the cover of the answer booklet.

(5) Record the total examination score (the sum of the credits allowed for Parts I and II) in the appropriate space in the box on the cover of the answer booklet.

(6) Check carefully for mechanical errors (addition, subtraction, etc.).

(7) Write your initials clearly in the appropriate space on the cover of the answer booklet.

Part I

Allow a total of 60 credits, 2 credits for each of 30 questions. If more than 30 questions are answered, only the first 30 answered should be considered. Allow no partial credit.

No credit should be allowed for:

- Failure to express certain amounts according to business practice

  Example: An invoice extension of $31.625 should be expressed as $31.63.

- Failure to express results as required by the statement of the question

  Example: A rate of discount to be given to the nearest tenth percent should be expressed as 17.3% not as 17.256%.

(1) $3\frac{1}{9}$

(2) $1,731.60

(3) $.60

(4) $414

(5) $1,115

(6) $806.52

(7) $689.75

(8) 18

(9) 59

(10) 3%

(11) $800

(12) $.35

(13) $255

(14) 20%

(15) $2,000

(16) $15,000

(17) $15.73

(18) $.75

(19) $330,850

(20) $1,236

(21) $4,000

(22) $4

(23) $612.25

(24) $153.18

(25) $315,000

(26) $9

(27) $5,145

(28) $444

(29) 157

(30) $411.86

(31) $120

(32) August 15

(33) $2,074.44

(34) 88,000

[2]

Part II

Allow a total of 40 credits, 4 credits for each of ten questions. If more than ten questions are answered, only the first ten answered should be considered. Partial credit may be allowed. Deductions for errors should be made as indicated below.

Deduct *4* credits for the following types of errors:

- Failure to use generally accepted business or mathematical methods in solution
- Failure to show all work which would not ordinarily be done mentally
- Two or more method errors in solution

Deduct *2* credits for the following types of errors:

- One or more computation errors in solution
- One method error in solution

Deduct *1* credit for the following types of errors:

- Each error due solely to transposed or incorrectly copied number
- Failure to express certain amounts according to business practice
- Failure to express results as required by the statement of the question. (This statement should not be interpreted to include those situations wherein a question calls for the price *each* and the student answers with the total price, or where the student rounds off too soon in a problem before the final step. These are considered method errors and should be penalized as such.)

(1) $48,860

(2) $5,475

(3) $1.40

(4) $4.05

(5) $5,520

(6) $222.56

(7) $4,325

(8) $55

(9) $188.16

(10) $395

(11) $392

(12) $176.60

(13) $654

As a reminder . . .

Regents examinations based on the Business Mathematics syllabus will not be offered after June 1987.

[3]