

The University of the State of New York
REGENTS HIGH SCHOOL EXAMINATION

BUSINESS MATHEMATICS

Monday, June 17, 1985 — 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: $\begin{array}{r} \$26.13 \\ \underline{7.28} \end{array}$

2 Divide 627,270 by 3,045.

3 Reduce $\frac{25}{350}$ to its simplest terms.

4 Miller rents a car at a rate of \$21.00 per day plus 8¢ for each mile the car is driven. If she drives 640 miles in 4 days, what is her total car rental bill?

5 Pexton bought five bonds at \$942.50 each. Brokerage fees and other expenses amounted to \$3.25 per bond. What was the total cost of these five bonds?

6 A desk is offered for sale on the installment plan, with payments of \$12.80 per month for 20 months. The same desk is available with payments of \$16.15 per month over a 15-month period. How much money would be saved by selecting the shorter time contract?

7 Harper pays the following annual premiums for automobile insurance: bodily injury liability, \$96; property damage liability, \$45; personal injury protection, \$20; collision, \$195; and uninsured motorist, \$2. What is the total annual cost of Harper's automobile insurance?

8 Orinski manages a motel which had the following expenses last year:

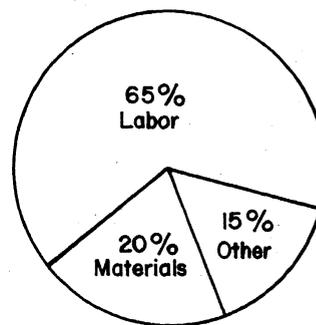
Maintenance	\$1,840
Salaries	6,250
Insurance	1,550
Linen	2,900
Taxes	2,810
Utilities	3,420
Other	2,030

The motel charged \$40 per night to rent a room. How many nightly rentals had to be received to cover the annual expenses?

9 Fisk's Federal income tax return showed taxable income of \$16,475. She is married and filing a separate return. According to the table below, what amount of tax does she owe?

If taxable income is—		And you are—			
At least	But less than	Single	Married filing jointly	Married filing separately	Head of a household
16,250	16,300	2,950	2,302	3,546	2,772
16,300	16,350	2,965	2,314	3,564	2,785
16,350	16,400	2,980	2,326	3,582	2,798
16,400	16,450	2,995	2,337	3,601	2,811
16,450	16,500	3,009	2,349	3,619	2,824
16,500	16,550	3,024	2,361	3,637	2,837
16,550	16,600	3,039	2,373	3,655	2,849
16,600	16,650	3,054	2,385	3,674	2,862

10 The graph below shows the distribution of one month's costs for the Hiller Company. If the total monthly costs were \$2,117, how much were the labor costs?



11 Smith and Reems manufacture lawn furniture. A finished lawn chair requires \$1.85 worth of raw materials, \$2.70 worth of factory overhead, and 30 minutes of workers' labor. If factory workers receive \$4.40 an hour, how much does it cost to make one lawn chair?

12 A store buys clock radios at \$15 each, less a trade discount of 25%. What does each clock radio cost the store?

13 The Boulevard Lawnmower Repair Service has the following assets and liabilities:

<i>Assets</i>	<i>Liabilities</i>
Cash.....\$3,500	Notes Payable\$1,000
Accounts Receivable..... 1,340	Accounts Payable..... 2,400
Machinery 8,760	Wages Payable..... 650
Truck..... 6,320	

What is the amount of the owner's equity (net worth) in the business?

- | | |
|--|--|
| <p>14 Walton rented a house for \$350 a month with an option to buy it. After exercising his option to buy the house, it cost him \$3,800 per year to maintain it. How much money did he save yearly by buying the house instead of renting it?</p> <p>15 The Hager family invested 5% of their total annual income of \$32,000 in a money market account. If they receive a return of 8% on their investment, how much will they earn in one year?</p> <p>16 A typewriter purchased for \$250 depreciates \$25 each year. What is the annual rate of depreciation?</p> <p>17 Tucker purchased a used automobile for \$3,800. He estimates that in four years the trade-in value will be \$800. What is the amount of the average annual depreciation?</p> <p>18 Howard's checkbook balance at the end of May was \$187.83. If Howard had failed to record a check for \$27.60 which he had written during the month, what would his correct checkbook balance have been?</p> <p>19 What is the exact number of days from August 15 to October 15?</p> <p>20 On January 2, 1985, Chen deposited \$500 in his savings account, which earned interest at the rate of 8% a year. If the interest was paid quarterly, what was the total amount on deposit on April 1, 1985?</p> | <p>21 Lindsley purchased a cottage for \$30,000. Five years later she sold it for \$37,000. Expenses during the five years amounted to \$3,972.57. What was her net gain in buying and selling the cottage?</p> <p>22 Rivera purchased 19 shares of stock at \$420 per share. The broker charged a total commission of \$98.30. What was Rivera's total cost for the purchase?</p> <p>23 Carmen owns property which is assessed at \$4,000. The school tax rate is \$158.01 per \$1,000 of assessed valuation. What is the amount of her school tax?</p> <p>24 In order to manufacture an executive chair, a company must spend \$172.75 for materials and labor. What must the company charge in order to realize a gross profit of \$34.55?</p> <p>25 Mason's Federal income tax return for last year showed interest income as follows: \$705, \$556, \$2,943, \$180, and \$125. He also received taxable stock dividends of \$15 each quarter. What was Mason's total interest and dividend income for the year?</p> <p>26 An invoice for \$120 dated February 3 was marked 2/10, n/30. What amount must be paid if the bill is paid on February 12?</p> <p>27 Bruno wishes to borrow money to pay her medical bills. The local bank will finance the loan for 36 months with monthly installments of \$83.03 each. Bruno's credit union will finance the same loan with monthly installments of \$82.43 each. How much will Bruno save over the 36 months by borrowing from the credit union?</p> |
|--|--|

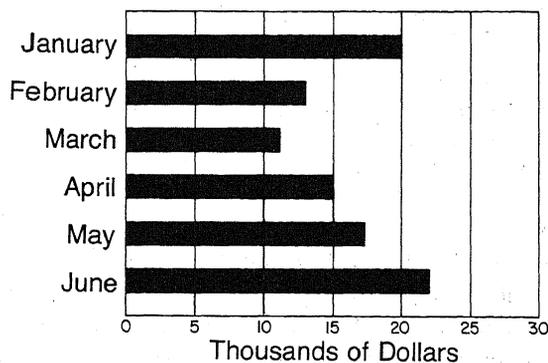
28 Last week Byrne worked 40 hours at the rate of \$4.70 per hour. He had the following deductions:

Federal income tax\$26.40
 State income tax..... 11.27
 FICA tax 12.88
 Health insurance 4.75

What was his net pay for the week?

29 Garvey made the following deposit at a bank: a check for \$224.30 and cash consisting of 5 ten-dollar bills, 2 five-dollar bills, 7 one-dollar bills, and \$6.93 in coins. What was Garvey's total deposit?

30 The horizontal bar graph below shows the sales made for the past six months. What percent of the January sales are the April sales?



31 An employee has been earning \$4.20 an hour for an 8-hour day. How much must he receive an hour to earn the same amount daily if the working day is reduced to 7 hours?

32 Gomez borrowed money on June 5 for 120 days. On what date must she repay this loan?

33 Goldstein operates a retail store. Last month he sold \$18,432 worth of merchandise, which cost him \$10,315. If the monthly operating expenses of his store were \$12,115, how much money did Goldstein lose last month?

34 From the life insurance premium table below, determine the annual premium of a 20-payment life policy, with a face value of \$20,000, taken out at the age of 20.

ANNUAL PREMIUM PER \$1,000 OF INSURANCE

Age at Issue	Straight Life	20-Payment Life	20-Year Endowment	5-Year Term
15	\$ 9.31	\$17.23	\$41.08	\$3.29
20	10.80	19.28	41.13	3.37
25	12.64	21.48	41.27	3.49
30	15.01	24.40	41.56	3.73
35	18.09	27.83	42.14	4.45
40	22.31	31.75	43.44	6.19
45	27.58	36.59	45.54	9.10

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 A portable sewing machine is listed at \$135, less trade discounts of 20% and 10%. What is the net price of this sewing machine?
- 2 Fanci-Fruit Mart bought 12 boxes of grapefruit, 40 to a box, at \$14.10 a box. Twenty of the grapefruit had to be thrown out because of spoilage. The remaining grapefruit were sold at \$.50 each. What was the total gross profit on the 12 boxes?
- 3 Stratton is paid for a 40-hour week with time and a half for overtime. Her regular pay is \$5.80 per hour. Recently she worked 48 hours in one week. What were her gross earnings for that week?
- 4 Tomaselli must order equipment which weighs 16 pounds for his fishing boat. If he has it shipped via United Delivery Service, it will take two days and cost a total of \$3.75. If he has it shipped via Overnight Air Express, it will arrive the next day and cost \$15 for the first 5 pounds and 60¢ for each additional pound. How much more will it cost to have the equipment shipped via Overnight Air Express?
- 5 Jacobs works on the assembly line at Esquire Manufacturing Company. She is paid 57¢ for each unit she completes that is acceptable. Last week her output was as follows: Monday, 85; Tuesday, 74; Wednesday, 68; Thursday, 76; and Friday, 55. Of the units she produced, 18 were rejected. What were her gross earnings for the week?
- 6 An office manager estimates the following annual costs of a filing clerk's work station:
Clerk's salary \$9,300
Fringe benefits 20% of salary
Size of work area 12 ft × 10 ft
Annual rent per sq. ft. \$5.80
Depreciation of equipment . . . \$275
What is the total annual cost of the work station?
- 7 Surani owns 100 shares of Data Write common stock, which paid quarterly dividends of 75¢ per share last year. She also owns 150 shares of Drill Best common stock, which paid semiannual dividends of 80¢ per share. What was the total amount of Surani's dividend income from these stocks last year?
- 8 Wheel Sports Store pays its salespeople on a graduated commission basis as follows:
Weekly sales up to \$3,000 — 7% commission
Weekly sales over \$3,000 — 12% commission
How much would a salesperson earn for selling \$4,100 worth of goods in one week?
- 9 While shopping at a department store, Green noticed a sale on coats at 25% off the original price of \$125. He also knew about a sale at a discount store of 20% off on coats originally priced at \$120. How much would Green save by purchasing the coat at the better offer?
- 10 Tierney purchased 150 small rugs for a total of \$1,500, and paid shipping costs of \$75 on the lot. She sold 80 at \$18 each; 45 at \$15 each; and the remainder at \$12 each. What was her gross profit on the entire lot?
- 11 King bought a home for \$40,000, paying \$10,000 down and arranging a mortgage for the rest at an annual interest rate of 11%. In addition to interest on the mortgage, his annual expenses were: insurance, \$185; repairs, \$165; taxes, \$825; and depreciation at 2% of the cost of the home. What were King's annual expenses during the first year of owning this home?
- 12 Lane, Simpson, and Young invested \$12,000, \$16,000, and \$20,000, respectively, in a retail business. The net profit was to be shared in proportion to each person's investment. If the net profit for 1984 was \$36,000, what amount of money did Simpson receive?

GO RIGHT ON TO THE NEXT PAGE.

13 Under her hospital plan, Mercedes is paid a regular daily rate of \$25.00 a day from the 1st through the 371st day in the hospital. Double benefits are paid if she requires intensive care, coronary care, or care in a burn center unit. Mercedes spent three days in the intensive care unit, and 14 additional days recuperating in the hospital. How much should she receive from her hospital plan?

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ANSWER BOOKLET

Part I Score
Part II Score
Total Score
Rater's Initials:

Student..... Teacher

School

Part I [60 credits]
Answer only 30 questions.

- | | | | |
|----------|----------|----------|----------|
| 1 _____ | 11 _____ | 21 _____ | 31 _____ |
| 2 _____ | 12 _____ | 22 _____ | 32 _____ |
| 3 _____ | 13 _____ | 23 _____ | 33 _____ |
| 4 _____ | 14 _____ | 24 _____ | 34 _____ |
| 5 _____ | 15 _____ | 25 _____ | |
| 6 _____ | 16 _____ | 26 _____ | |
| 7 _____ | 17 _____ | 27 _____ | |
| 8 _____ | 18 _____ | 28 _____ | |
| 9 _____ | 19 _____ | 29 _____ | |
| 10 _____ | 20 _____ | 30 _____ | |

Part II [40 credits]

Answer only *ten* of the thirteen questions in this part. *Be sure to write the number of the problem and the answer in the proper spaces.* All work for this part must be shown in the spaces provided.

[Use this space for computation.]

Problem Number: _____

Answer: _____ [4]

[Use this space for computation.]

Problem Number: _____

Answer: _____ [4]

[Use this space for computation.]

Problem Number: _____

Answer: _____ [4]

[Use this space for computation.]

Problem Number: _____

Answer: _____ [4]

Part II — *continued*

[Use this space for computation.]

Problem Number: _____

Answer: _____ [4]

[Use this space for computation.]

Problem Number: _____

Answer: _____ [4]

[4]

Part II — *continued*

[Use this space for computation.]

Problem Number: _____

Answer: _____ [4]

[Use this space for computation.]

Problem Number: _____

Answer: _____ [4]

[5]

[OVER]

Part II — *concluded*

[Use this space for computation.]

Problem Number: _____

Answer: _____ [4]

[Use this space for computation.]

Problem Number: _____

Answer: _____ [4]

I do hereby affirm, at the close of this examination, that I had no unlawful knowledge of the questions or answers prior to the examination, and that I have neither given nor received assistance in answering any of the questions during the examination.

Signature

[6]

FOR TEACHERS ONLY

BUSINESS MATHEMATICS

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SCORING KEY AND RATING GUIDE

Mechanics of Rating

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) \$18.85	(11) \$6.75	(21) \$3,027.43	(31) \$4.80
(2) 206	(12) \$11.25	(22) \$8,078.30	(32) October 3
(3) $\frac{1}{14}$	(13) \$15,870	(23) \$632.04	(33) \$3,998
(4) \$135.20	(14) \$400	(24) \$207.30	(34) \$385.60
(5) \$4,728.75	(15) \$128	(25) \$4,569	
(6) \$13.75	(16) 10%	(26) \$117.60	
(7) \$358	(17) \$750	(27) \$21.60	
(8) 520	(18) \$160.23	(28) \$132.70	
(9) \$3,619	(19) 61	(29) \$298.23	
(10) \$1,376.05	(20) \$510	(30) 75% or 75	

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) \$97.20

(8) \$342

(2) \$60.80

(9) \$2.25

(3) \$301.60

(10) \$840

(4) \$17.85

(11) \$5,275

(5) \$193.80

(12) \$12,000

(6) \$12,131

(13) \$500

(7) \$540