The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

BUSINESS MATHEMATICS

Friday, June 18, 1976 — 1:15 to 4:15 p.m., only

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Instructions for Part I — Rapid Calculation Test

Do not begin this part until the signal is given.

Scrap paper may be used. Place your answers only in the spaces provided in this booklet. At the end of 15 minutes, work must stop and this booklet must be immediately handed to the examiner. No partial credit will be allowed.

Be sure to write your name in the proper space on the back of this sheet.

DO NOT OPEN THIS EXAMINATION BOOKLET UNTIL THE SIGNAL IS GIVEN.

All answers must be written with blue or black pen.

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 this declaration.

RAPID CALCULATION TEST

Pupil ....

Directions (1–18): Write the correct answer to *each* of the following in the blank space at the right of each question. Scrap paper may be used.   [18]

1 Add: 17.3
       6.107
   326.04
    68.305
   ————

1...................

2 Subtract: $108.00
        − 79.08
      ————

2....$...............

3 What is 7.3% expressed as a decimal?

3...................

4 How many minutes are there in 3¼ hours?

4...................

5 What is the amount of interest on $2,500 for 120 days at 7½%?

5....$...............

6 Subtract 9⅝ from 20.

6...................

7 What percent of 60 is 90?

7...................

8 If one inch equals 25.4 millimeters, how many millimeters are there in 10 inches?

8...................

9 John started a trip at 9:45 a.m. and arrived at his destination at 1:30 p.m. How long did the trip last?

9...................

10 At $.41 a liter, what will 109 liters of milk cost?

10....$...............

11 What is the cost of 1,400 bricks @ $200 per M?

11....$...............

12 If the price of sugar is 19¢ a kilogram, how many kilograms can be purchased for $3.23?

12...................

13 What is the cost of 390 articles at 33⅓¢ each?

13....$...............

14 If one foot equals 30.48 centimeters, how many feet are there in 91.44 centimeters?

14...................

15 The heights of five members of a basketball team are 1.84, 1.86, 2.09, 1.97, and 1.94 meters. What is the average height, in meters, of this basketball team?

15...................

Directions (16–18): Base your answers to questions 16 through 18 on the chart below which lists the rates for classified advertisements in a daily newspaper.

ADVERTISING RATES
MINIMUM CHARGE: 12 WORDS OR LESS 72¢

WORDS IN AD	1 TIME		3 TIMES	
	Charge	Cash	Charge	Cash
12	.84	.72	2.16	1.80
13	.91	.78	2.34	1.95
14	.98	.84	2.52	2.10
15	1.05	.90	2.70	2.52
16	1.12	.96	2.88	2.40
17	1.19	1.02	3.06	2.55
18	1.26	1.08	3.24	2.70
19	1.33	1.14	3.42	2.85
20	1.40	1.20	3.60	3.00
21	1.47	1.26	3.78	3.15
22	1.54	1.32	3.96	3.30

16 What is the cost of a 20-word advertisement that is run 3 times and paid by cash?

16....$..............

17 What is the average *daily* cost of a 16-word advertisement that is run 3 times and charged?

17....$..............

18 What is the cost of a 10-word advertisement that is run for 1 day and paid by cash?

18....$..............

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The answers to the questions on the following parts of this examination are to be written in the separate answer booklet. Be sure to fill in the heading of your answer booklet and sign the statement printed at the end after you have completed the examination. In recording your answers, be sure to write the number of the problem and the answer in the proper spaces.
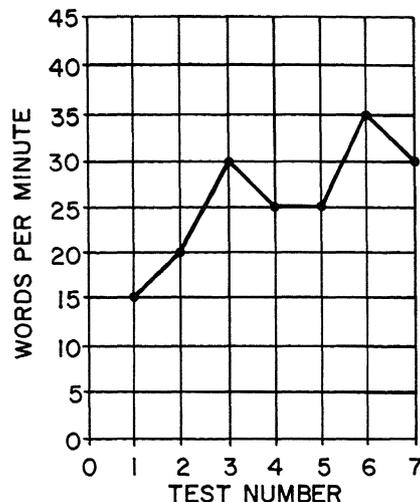
DO NOT OPEN THIS EXAMINATION BOOKLET UNTIL THE SIGNAL IS GIVEN

Answer any 18 of the 20 questions in this part. Scrap paper may be used. Write only your answers in the separate answer booklet. No partial credit will be allowed.　[36]

1 A motorcycle can be purchased for $280.00 in cash, or on the installment plan by paying $25 down and $18.10 per month for 18 months. By what amount of money will the total installment price of this motorcycle exceed its cash price?

2 A man earns a total of $85.50 for a 38-hour week before any deductions are made. What is his hourly rate of pay?

3 Glidden, a self-employed barber, had gross earnings of $6,250 this year. If the rate for FICA contributions for the self-employed is 7.9%, what will be the amount of Glidden's FICA tax for this year?

4 A watch may be bought for $135 cash or on the installment plan by making 18 equal regular monthly payments of $8.25. By what percent does the installment price exceed the cash price?

5 In order to pay cash for a new automobile and to avoid paying finance charges of $132, Brunelle borrows $1,100 at 5½% interest for one year. How much money does Brunelle save by borrowing the money and paying cash for the automobile?

6 Jackson received an invoice for $653.50. If she pays within ten days, she needs to pay only $640.43. What percent of cash discount will she receive by paying within ten days?

7 An article that cost a retailer $45.50 was sold for $70. What was the percent of profit based on the *selling price*?

8 What is the amount of simple interest on a $180, 3-month promissory note with an interest rate of 9%?

9 What amount of money will be needed to pay an invoice amounting to $415 dated March 13, with terms of 2/10, 1/20, n/60, if paid on April 5?

Directions (10–11): Base your answers to questions 10 and 11 on the graph below which shows the results of seven typing tests taken by a high school student.

10 What was the net increase in words per minute between test one and test three?

11 What average number of words per minute did the student type on these seven tests?
[Express your answer to the *nearest whole number.*]

12 Wickham insured her property, valued at $42,000, for 75% of its value. She paid an annual rate of $.66 per $100. What was the annual cost of this policy to Wickham?

13 By what percent does a single discount of 40% exceed a series of discounts of 30% and 10%?

14 A contractor quoted Emerson a price of $28,000 to build a house according to plans Emerson had prepared. A similar house already built is available for $25,000. By what percent does the contractor's price exceed the cost of the home already built?

15 What is the *maturity value* of a 30-day note for $250, bearing interest at 6%?

16 Enrollment in a certain school dropped from 985 in 1971 to 950 in 1972. What was the percent of decrease, correct to the *nearest tenth* of a percent?

17 The Underwood Hardware Store purchased hammers at $15.30 per dozen, less 33⅓%. What was the net cost of *each* hammer to the Underwood Hardware Store?

18 The downpayment on an electric refrigerator purchased on the installment plan at a total cost of $360 is $36. The balance is to be paid in 18 equal monthly payments. What is the amount of *each* monthly payment?

19 Property is insured against fire by the Mutual Insurance Company for $12,000 and by the Burns Company for $6,000. If the two companies agree on a settlement of $2,400 for fire damages, for what amount of money will the Burns Company be liable?

20 Divide 1,366.56 by 15.6 and multiply the quotient by 14.

Part III

Answer any four of the five questions in this part. All work must be shown in the answer booklet. Partial credit may be allowed. [16]

21 Joseph Moore bought an automobile on January 5, 1971 for $3,000. On January 5, 1976, he was given $300 as a trade-in allowance on a new automobile. What was the amount of the average annual depreciation on this automobile? [4]

22 During an average month, a retailer purchases $2,600 worth of goods from one of her suppliers, terms 2/10, n/30. How much money does the retailer save in a year's time by taking advantage of the cash discount each month? [4]

23 Paul Saab, a salesman for barber supplies, receives a 20% commission on all sales up to $2,000, and 15% on that part of his sales in excess of $2,000. Last month his total sales amounted to $3,150. What were his total earnings for the month? [4]

24 Pieceworkers at Houston Electronics are paid on the basis of the following schedule:

60 pieces or less	30¢ each
Next 15 pieces	45¢ each
All over 75 pieces	60¢ each

Last Thursday, Frank Yosie produced 86 pieces. What were his gross earnings for that day? [4]

25 Martin may pay her car insurance premium either with a cash payment of $270.00 or on an installment plan by paying $65.40 in cash and the balance in 8 payments of $28.20 each. How much would Martin save if she paid the insurance premium with a cash payment instead of on the installment plan? [4]

Part IV

Answer any five of the seven questions in this part. All work must be shown in the answer booklet. Partial credit may be allowed. [30]

26 Stanley, a salesman, is paid a salary of $250 a month. In addition, he is paid a commission of 4% on his sales up to and including $2,000 in any one month and 5% commission on that part of his sales in excess of $2,000 in any one month. In July, Stanley's sales amounted to $7,400 and in August, $6,800.

What were Stanley's total earnings for these two months? [6]

27 Ames purchased a refrigerator on the installment plan that had a cash price of $460. Ames made a downpayment of 25% of the cash price. There was a carrying charge of 12% on the remaining unpaid balance. The amount outstanding was to be paid in 24 monthly installments. What was the amount of *each* monthly installment? [6]

28 On July 31, Heintz's checkbook balance was $1,218.26. Her bank statement on that date showed a balance of $1,098.83 and a service charge of $2.80. Outstanding checks were for $75.91, $102.16, and $17.30. Heintz found a canceled check for $12 that had not been entered in her checkbook and a deposit of $300 that had been made too late in the month to appear on that bank statement. What is the correct available bank balance? [6]

29 Sanders works in a factory and earns $3 per hour for a 40-hour week, with time-and-one-half for overtime. Last week she worked a total of 50 hours. Deductions from her earnings were: $9.65 for FICA (Social Security); $14.40 Federal withholding tax; $2.75 New York State withholding tax; $1.00 United Fund contribution; $1.20 group health insurance. What was the amount of her take-home pay? [6]

30 Bainard's house and lot are valued at $24,000 in a community where property is assessed for real estate tax purposes at 55% of its true value. The rate of taxation in the current year is $2.961 per $100 of assessed valuation. To the *nearest whole cent*, how much will Bainard's property taxes amount to this year? [6]

31 Susan Johnson changed her method of paying for automobile insurance from 12 premiums of $15 a month to a single annual premium of $169.20. What percent did Johnson save by changing her method of making payments? [6]

32 Robert and Judy Carter had a taxable income of $23,882 after they made all of their deductions. According to the tax table for married couples filing joint returns, they must pay $4,380 plus 32% of the excess over $20,000. How much tax must they pay? [Round off your answer to the *nearest whole dollar*.] [6]

FOR TEACHERS ONLY

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SCORING KEY

BUSINESS MATHEMATICS

Friday, June 18, 1976 — 1:15 to 4:15 p.m., only

Use only *red* ink or *red* pencil in rating Regents papers. Do not attempt to *correct* the pupil's work by making insertions or changes of any kind. Use checkmarks to indicate pupil errors.

Scores should be cumulated within parts of the examination and transferred to the cover of the answer booklet.

Part I — Rapid Calculation Test

Allow a total of 18 credits, one credit for each of the following. [Allow no partial credit.]

(1) 417.752	(6) 10% *or* 10.375	(11) $280.00	(16) $3.00
(2) $28.92	(7) 150%	(12) 17 K	(17) $.96
(3) .073	(8) 254	(13) $130.00	(18) $.72
(4) 195	(9) 3 hr 45 min *or* 3¾ hr	(14) 3 cm	
(5) $62.50	(10) $44.69	(15) 1.94 M	

Part II

Allow credit for only 18 of the 20 questions in this part. If more than 18 questions are answered, only the first 18 answered should be considered. Allow a total of 36 credits, two credits for each correct answer. [Allow no partial credit.]

(1) $70.80	(11) 26 wpm
(2) $2.25	(12) $207.90
(3) $493.75	(13) 3%
(4) 10%	(14) 12%
(5) $71.50	(15) $251.25
(6) 2%	(16) 3.6%
(7) 35%	(17) $.85
(8) $4.05	(18) $18.00
(9) $415.00	(19) $800.00
(10) 15 wpm	(20) 1,226.4

[OVER]

Part III

Allow a total of 16 credits, 4 credits for each of four groups. If more than four groups are answered, only the first four answered should be considered. [Allow partial credit as indicated in the pamphlet entitled *Suggestions for the Rating of Regents Examination Papers in Business Subjects* as recorded under Part IV.]

(21) $540.00

(22) $624.00

(23) $572.50

(24) $31.35

(25) $21.00

Part IV

Allow a total of 30 credits, 6 credits for each of five questions. If more than five questions are answered, only the first five answered should be considered. [Allow partial credit as indicated in the pamphlet entitled *Suggestions for the Rating of Regents Examination Papers in Business Subjects*.]

(26) $1,170.00

(27) $16.10

(28) $1,203.46

(29) $136.00

(30) $390.85

(31) 6%

(32) $5,622.00