The University of the State of New York

289TH HIGH SCHOOL EXAMINATION

# BUSINESS ARITHMETIC

Thursday, August 19, 1943 — 8.30 to 11.30 a. m., only

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**Fill in the following lines:**

Name of pupil..............................................................Name of school...............................................................

## Instructions

*Do not open this sheet until the signal is given.*

All parts of the rapid calculation test are to be worked mentally and the results placed on the question paper. At the end of 15 minutes, work must stop and the sheet used for this part of the examination must then be detached from the rest of the question paper and immediately handed to the examiner.

All work must be done with pen and ink.

# RAPID CALCULATION TEST

1–2 *a* Add: [5]

3961
6743
4659
5738
6427
3872
6948
7586
5936
7862
9584
4327
5872
6755
9672
6869

*b* Make the extensions: [5]

48 articles @ $2.50 =

125 articles @ .16 =

72 articles @ .37½ =

630 articles @ .66⅔ =

1240 dozen @ 1.50 =

*c* Find the interest on *each* of the following: [4]

$900 for 22 days at 6 % =

$800 for 54 days at 4½% =

$153 for 20 days at 4 % =

$600 for 72 days at 3 % =

*d* Subtract: [2]

| bu. | pk | qt | pt |
|-----|-----|-----|-----|
| 4 | 2 | 3 | 0 |
| 1 | 3 | 3 | 1 |

*e* Complete *each* of the following: [4]

15 is ¾ as much as ........

48 diminished by ⅓ of itself is ........

⅛ of 1% expressed as a decimal is ........

30 is 150% of ........

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Write at top of first page of answer paper (*a*) names of schools where you have studied, (*b*) number of weeks and recitations a week in business arithmetic previous to entering summer high school, (*c*) number of recitations in this subject attended in summer high school of 1943 or number and length in minutes of lessons taken in the summer of 1943 under a tutor licensed in the subject and supervised by the principal of the school you last attended.

The minimum time requirement is five recitations a week for a school year. The summer school session in business arithmetic will be considered the equivalent of one semester's work during the regular session or five recitations a week for half a school year.

For those pupils who have met the time requirement the minimum passing mark is 65 credits; for all others 75 credits.

For admission to this examination attendance on at least 30 recitations in this subject in a registered summer high school in 1943 or an equivalent program of tutoring approved in advance by the Department is required.

*Answer questions 1–2 and eight of the others. Unless otherwise stated all operations except mental ones are to be shown. Practical business methods must be used in solutions.*

1–2 Rapid calculation test on attached sheet. [20]

3 Answer all parts of this question. [10]   [Two credits for each correct answer; no partial credit. Answers only are required in this question.]

    *a* From a bolt of cloth containing $46\frac{7}{8}$ yards, the following pieces were cut: $3\frac{3}{4}$ yards, $5\frac{1}{4}$ yards, $6\frac{3}{8}$ yards, $8\frac{5}{6}$ yards. How much cloth is left in the bolt?

    *b* Johnson, when starting on a trip, noted that the speedometer on his car read 18,762 miles; at destination it read 19,134. He drove for 12 hours. What was the average speed per hour?

    *c* A profit of 25% on the cost of an article is equivalent to what per cent of the selling price of the article? [Disregard selling expenses.]

    *d* During a special sale, a table that had been marked $36 was sold for $30. What per cent discount was allowed?

    *e* Arthur wishes to buy a war bond that costs $18.75 and will be worth $25 in 10 years. He has a stamp book that contains three 25¢ war stamps. He delivers 75 magazines a week, on which he makes 3¢ each, and invests his profits in stamps. In how many weeks can he purchase his bond?

4 James Monroe owns merchandise valued at $10,000 and a building valued at $5000. He insured the merchandise for 80% of its value and the building for 75% of its value. The rate on the merchandise is 35¢ per $100 for one year and the rate on the building is 70¢ per $100 for 3 years. The policies bear the 80% coinsurance clause. A fire caused a $2500 loss to the merchandise; damage to the building amounted to $1000. Find:

    *a* The face value of *each* policy   [2]

    *b* The average yearly cost of insurance   [4]

    *c* The amount the insurance company paid for the damage to the building   [2]

    *d* The total amount received from the insurance company   [2]

5 A contractor offered to build James Rogers a house on a cost-plus-15% basis. The estimated costs for material and labor were as follows: carpentry and lumber $1000, electrical fixtures and wiring $250, excavating $275, grading $200, masonry $350, painting and plastering $800, plumbing and heating $900, roofing $300. What was the estimated total cost of the house to Rogers? [10]

[3]                                                                                                      [OVER]

**6** On August 7, Jerome purchased merchandise for $5600, subject to a trade discount of 25%, terms $^3/_{10}$ $^n/_{60}$. On August 17, he had $2000 to apply on the payment of the bill. On that date he borrowed, at 6% interest until the due date, the necessary additional money to pay the bill.

    *a* How much interest must he pay?   [4]

    *b* How much money will he save?   [6]

**7** The property in a certain town is assessed for $4,750,000. The estimated expenses for the year are as follows: wages and salaries $25,000, schools $50,460, new buildings $15,000, street improvements $9000, interest on bonds $800.

    *a* What should be the tax rate (correct to the *nearest hundred-thousandth*) to yield income sufficient to meet the expenses?   [7]

    *b* Express this rate per $1000.   [1]

    *c* How much tax must a man pay who owns a house that is assessed at $8500?   [2]

**8** Jones Miller, a salesman, is paid a salary of $65 a week and a commission of $2\frac{1}{2}$% on total sales in excess of $3000 in any single week. His traveling expenses, not to exceed $42 a week, are paid by the company. Miller submitted the following report for two weeks' work:

|  | Sales | Traveling expenses |
|---|---|---|
| First week | $5800 | $38 |
| Second week | 6200 | 45 |

    *a* What was the total amount of Miller's earnings?   [8]

    *b* What was the amount of the check the company mailed to Miller, after receiving his report?   [2]

**9** The National Nut Store made a mixture of 20 pounds of pecans costing 29¢ a pound, 36 pounds of peanuts at 9¢ a pound, 12 pounds of walnuts at 18¢ a pound and 16 pounds of Brazil nuts at 15¢ a pound. If the mixture is put up in packages containing two pounds, at what price per package must the mixture be sold in order to make a profit of $33\frac{1}{3}$% on the selling price?   [10]

**10** Shoes cost the Elite Boot Shop $2.50 a pair. When the selling price was $4 a pair, the average daily sales were 30 pairs. When the selling price was reduced to $3.50 a pair, the average daily sales were 50 pairs. ·

    *a* Were the daily profits increased or decreased?   [1]

    *b* How much?   [1]

    *c* What was the per cent of increase or decrease?   [2]

    *d* When the shoes sold at $4 a pair, what rate of profit was made on the cost?   [3]

    *e* When the shoes were sold at $3.50 a pair, what was the rate of profit on the cost?   [3]

**11** Gerald Morse held a $5\frac{1}{2}$% mortgage for $4000 on the property of Truman, Inc. The mortgage was dated July 1, 1941; interest was payable semiannually. The following indorsements appeared on the bond which was attached to the mortgage:

        January 1, 1942, interest due and $1300 on principal

        July     1, 1942, interest due

        January 1, 1943, interest due and $1600 on principal

    *a* If no additional payments were made, what amount was required to pay the mortgage in full on July 1, 1943?   [4]

    *b* What was the total amount of interest paid for the use of the money?   [6]

**12** Dix & Brown deposited the following: 67 pennies, 38 nickels, 63 dimes, 25 quarters, 30 half-dollars, 23 dollars, 3 five-dollar bills, 5 ten-dollar bills, 4 twenty-dollar bills and checks for $46.75, $3.86, $62.47, $36.43, $4.59, and $16.79. Find the amount of the deposit.   [10]   [No credit unless answer is correct.]