The University of the State of New York

301ST HIGH SCHOOL EXAMINATION

BUSINESS ARITHMETIC

Wednesday, August 20, 1947 — 8.30 to 11.30 a. m., only

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 *answers only* 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 answers must be written with pen and ink.

This is a mental test — scrap paper may not be used.

RAPID CALCULATION TEST

1–2 *a* Complete *each* of the following: [5]

From the product of 9 and 7 subtract the sum of 48 and 12. _____

One ton is equivalent to _____ cwt.

A pupil spends 60% of his allowance for lunches and 25% for amusement. What per cent does he have left? _____%

The scale of miles on a map is 1 inch = 100 miles. How far apart in miles are two cities $5\frac{1}{4}$ inches apart on the map? _____ miles

_____ is 150% of 90.

b Complete the following summary: [5]

Branch	Gross Sales		Sales Returns	Net Sales
Cambridge	$11,375	less	$ 125	$11,250
Northburg	10,500	less	250	
Pittsville	27,900	less	2,100	
Wellsport	8,100	less	200	
Totals	$		$	$

c Compute the interest: [5]

$ 409 for 6 months at 6 % = $

$ 500 for 30 days at 3 % = $

$1500 for 3 days at 2 % = $

$1000 for 1 year at $4\frac{1}{2}$% = $

$ 22 for 300 days at 6 % = $

d Make the extensions: [5]

150 articles at $33\frac{1}{3}¢$ each = $

2 ft at $1.50 per yd = $

25 bu. at $2.16 per bu. = $

2500 lb. at $18 per ton = $

50 doz. at $20\frac{1}{2}¢$ per doz. = $

BUSINESS ARITHMETIC

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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 1947 or number and length in minutes of lessons taken in the summer of 1947 under a tutor licensed in the subject and supervised by the principal of the school you last attended.

The minimum time requirement is four or 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 (four 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 1947 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 written in ink. 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 What is the difference between $\frac{1}{4}$ of \$200 and $\frac{1}{4}\%$ of \$200?
b An article was sold for \$45. This was 10% below the regular price. What was the regular price?
c Four per cent interest is charged on a mortgage of \$9000. What is the amount of the interest per month?
d A single discount of 20% is how much greater than a discount series of 10% and 10%?
e The head of a family spends \$540, or $\frac{3}{10}$ of his income, for food during the year. What is his annual income?

4 Jordan, Martin and Lee are planning to form a partnership. They intend to invest \$18,000, \$24,000 and \$30,000, respectively. If the firm should make a profit of \$12,000 the first year,

a What would Jordan receive if the profits were divided equally? [2]
b What would Martin receive if the partners were allowed 4% interest on their investments and the remainder of the net profit was divided equally? [4]*
c What would Lee receive if the profits were shared in proportion to the investments? [4]*

5 Two machines of like capacity are on the market. The first machine costs \$12,000 and has a scrap value of \$100 at the end of 4 years. The second machine costs \$15,000 and has a trade-in value of \$600 at the end of 6 years. Taking into consideration the average annual depreciation and interest at 4% on the amount invested, find

a The total yearly cost of owning the first machine [4]*
b The total yearly cost of owning the second machine [4]*
c Which machine is the cheaper to own [1]
d How much cheaper per year [1]

6 The total expense for conducting the affairs of a county for a year was \$444,395.84. Income from sources other than property taxes was \$35,102.09. The remainder was raised by a tax on property assessed for \$51,875,000.

a Find the tax rate per \$1. [Carry the decimal to five places.] [6]*
b What was the amount of the tax bill of a person whose \$15,000 property was assessed for 90% of its value? [4]*

7 A 60-day, 4% interest-bearing note for $1260, dated August 1, was discounted on August 15. The discount rate was 5%.

a When is the note due? [1]
b What is its maturity value? [2]
c What is the discount period or term of discount? [2]
d What is the bank discount? [4]*
e Find the net proceeds of the note. [1]

8 A man purchased 200 shares of stock at $90.20 a share. This stock pays a quarterly dividend of 75¢ a share. He also bought thirty $1000 bonds bearing 3½% interest for $1020.50 each. In each case the price included brokerage and other expenses.

a Find the cost of the stock. [1]
b Find the cost of the bonds. [1]
c What was the annual income from the stock? [2]
d What was the annual income from the bonds? [2]
e Find the rate of income from the total investment to the *nearest tenth of a per cent.* [4]*

9 *a* A salesman's commissions were $19, $17, $23, $18 and $21 on five consecutive days. If he wants his commission on the sixth day to be enough to make an average of $20 a day for the six days, what will his commission for the sixth day have to be? [4]*
b If a salesman receives a commission of 8%, what was the total of his sales on a day when his commission amounted to $19? [4]*
c When the selling price is $20, which is the better commission for the salesman, 10% or $3 per article? [1] How much better? [1]

10 A piece of equipment can be bought for a cash price of $1000. The installment price is $200 down plus 12 monthly payments of $72 each, which includes all interest and carrying charges.

a What per cent of the unpaid balance is added for interest and carrying charges? [6]*
b If a person had enough cash for the down payment and could borrow the balance at 6% a year, how much would he gain or lose by purchasing at the cash price? [4]*

11 A building has a total usable floor space of 51,000 square feet. The space used for various purposes is as follows:

Offices	17,000 square feet
Salesrooms	6,375 square feet
Retail stores	12,750 square feet
Storage	remainder of the space

a What fractional part (reduced to its lowest terms) of the total usable floor space is used for *each* purpose? [4]*
b Expenses amounting to $6000 are to be divided in proportion to the amount of floor space used for each purpose. How much should be charged to *each?* [4]*
c Prove the correctness of your answers to part *a*. [1]
d Prove the correctness of your answers to part *b*. [1]

12 An individual deposited in the bank the following: 49 pennies, 72 nickels, 21 dimes, 89 quarters, 9 half dollars, 96 one-dollar bills, 5 two-dollar bills, 6 five-dollar bills, 2 ten-dollar bills, 3 twenty-dollar bills and checks for $2.57, $3.89, $10.50, $1.32 and $198.76.

a What was the total of the deposit not including the checks? [6]*
b What was the total of the checks? [2]
c What was the total deposit? [2]

* *To the teacher.* One-half the number of credits should be deducted for each different error in method. [No credit should be allowed for a solution which contains an error in method and an error in computation.]