The University of the State of New York

313TH HIGH SCHOOL EXAMINATION

BUSINESS ARITHMETIC

Wednesday, August 22, 1951 — 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.

Part I

RAPID CALCULATION TEST

1–2 *a* Make the extensions: [5]

720 lb. at 25¢ per lb. = $

36 bu. at $1.10 per bu. = $

1200 lb. at $15 per ton = $

24 ft. at $2 per yard = $

50 bu. at 86¢ per bu. = $

b Compute the interest: [5]

$850 for 60 days at 3% = $

$150 for 18 days at 6% = $

$540 for 20 days at 5% = $

$30 for 73 days at 6% = $

$880 for 15 days at 1½% = $

c Underscore the correct answer in *each* of the following: [6]

¼% of $960 is ($2.40; $9.60; $38.40; $240.00).

38% expressed as a fraction *in lowest terms* is ($\frac{76}{200}$; $\frac{38}{100}$; $\frac{19}{50}$; $\frac{9}{25}$).

20% more than 140 is (28; 112; 168; 175).

An article that cost $40 was sold for $48. The per cent of gain based on the cost was ($\frac{1}{5}$%; 16$\frac{2}{3}$%; 20%; 25%).

$\frac{1}{100}$ of 6378 is (637.8; 63.78; 6.378; .6378).

24 is (25%; 33$\frac{1}{3}$%; 50%; 75%) less than 32.

d Complete the following summary of net profit: [No partial credit allowed.] [4]

Year	*Gross Profit*	(*less*)	*Overhead*	*Net Profit*
1948	$ 9873	(*less*)	$ 2187	$ 7686
1949	$ 9926		$ 2502	
1950	$ 9185		$ 2741	
Totals	$		$	$

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 1951 or number and length in minutes of lessons taken in the summer of 1951 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 1951 or an equivalent program of tutoring approved in advance by the Department is required.

Answer questions 1–2 in Part I, four questions from Part II, four questions from Part III and four questions from Part IV. Unless otherwise stated, all operations except mental ones are to be shown written in ink. Practical business methods must be used in solutions.

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

Part II

Answer any four questions from this part.

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

a $5\frac{1}{2}\%$ interest is charged on a $15,000 mortgage. What amount of interest is paid semi-annually on this mortgage?

b Haskins received an invoice for $480 for goods purchased on June 18 with terms of $^{5}/_{10}$, $^{2}/_{30}$, $^{N}/_{60}$. What amount of money would Haskins pay on July 15 in full settlement of this invoice?

c A lamp that had been selling for $24 less 10% was marked down to $18.36. What additional per cent of discount was given?

d In drawing his plans for a house, an architect used a scale of $\frac{1}{8}'' = 1'$. How long a line did he draw to represent the width of a window 4 feet wide?

e A ninety-day promissory note dated April 17 was discounted at the bank on May 22. For how many days did the bank charge discount?

4 Answer *all* parts of this question. [This is an accuracy test. One credit for each correct answer; no partial credit; no credit allowed unless work is shown. Wherever necessary, reduce the answer to simplest form.] [10]

a Add 386.29; 84.206; 1876.24; 1.873

b Subtract 87.541 from 229.6

c Divide 72.96 by 1.9

d Multiply 24.3 by 7.6

e Add $1\frac{1}{2}$; $3\frac{1}{4}$; $21\frac{2}{3}$; $7\frac{1}{6}$

f Subtract $19\frac{1}{4}$ from $32\frac{1}{5}$

g Divide $87\frac{1}{2}$ by $3\frac{3}{4}$

h Using the four-step process, multiply $20\frac{2}{3}$ by $9\frac{1}{4}$

i Change $\frac{7}{13}$ to a per cent, correct to the *nearest tenth of a per cent.*

j Express 118% as a mixed number in lowest terms.

5 Write the letters *a, b, c, d,* and *e* in a column on your answer paper. After *each* letter write *true* if the corresponding statement below is correct; if the statement is false, write the *amount* that should be substituted for the underscored amount to make the statement correct. [Two credits will be deducted for each incorrect answer.] [10]

a Ralph's marks in a certain subject for the first four days of the week were 80, 76, 85 and 94. In order to have a weekly average of 85%, he will need to get, on the fifth day, a mark of 80%.

b A salesman sold some goods for $1500 and retained $300 as his commission. The per cent of commission he charged was 25%.

c A series discount of 40% and 20% is equal to a single discount of 52%.

d A radio costing $78 was sold for $48 four years later. The average annual depreciation was $30.

e Benton is employed on a 40-hour-per-week basis, with time-and-a-half for overtime. During a recent week he worked a total of 52 hours. His regular hourly rate was $1.30 per hour. His total earnings were $75.40.

6 Day, an electrical appliances dealer, bought a refrigerator for $210, less $16\frac{2}{3}\%$. His overhead expenses averaged 12% of sales. At what price must he sell this refrigerator in order to make a net profit of 18% of the selling price? [10]*

7 Randall has $100 cash and wishes to buy a set of dining room furniture. The cash price of this set is $450. Randall can, if he chooses, buy the set on the installment plan by paying $100 down and 12 equal monthly installments of $32.50 each. He borrows from a bank for one year, at 6% annual interest, the additional amount he needs to pay the cash price. How much money does he save by borrowing to pay the cash price instead of buying on the installment plan? [10]

Part III

Answer any four questions from this part.

8 Finn's July telephone bill for local service was $4.80. This bill was subject to a Federal tax of 15%. In addition, Finn had made long distance calls totalling $3.84, which were subject to a 25% Federal tax. What amount of money did Finn send to the telephone company to pay the entire bill, including tax? [6]*

9 Wilson paid the following taxes in 1949 and 1950:

Tax	*1949*	*1950*
Federal income	$420.16	$523.20
State income	68.12	89.35
Real estate	210.86	256.00
Gasoline, sales, etc.	104.79	197.83

a What were Wilson's total taxes for 1949? [1]

b What were his total taxes for 1950? [1]

c His 1950 taxes were what per cent greater than his 1949 taxes? [Give answer to the *nearest whole per cent.*] [4]*

10 Craig bought some stock at $115 per share. This price included brokerage and other expenses. During the first year he owned the stock, Craig received quarterly dividends per share as follows:

January, 1950	$1.58
April, 1950	1.65
July, 1950	1.65
October, 1950	1.80

What annual per cent of return did Craig receive on his investment during this year, correct to the *nearest tenth of a per cent?* [6]*

[OVER]

11 William Harrison's checkbook balance on July 1, 1951, was $847.29. His bank statement on that date showed a balance of $1021.87. A service charge of $2.15 had been deducted from the balance on the statement. Checks were outstanding for $125; $42.80; $8.93. Reconcile these figures and indicate Harrison's correct available checkbook or bank balance on that date. [6]*

12 Avery, a book salesman, is paid a salary of $35 per week. He is also paid a commission of 10¢ per book on all sales and an additional commission of 2½¢ per book on all sales in excess of 80 books per week. During a recent week, he sold 124 books. What were Avery's total earnings for that week? [6]*

Part IV

Answer any four questions from this part.

13 Miller carries a life insurance policy for $5000 at an annual rate of $26.50 per $1000. This year his policy earned him a dividend of $3.86, which he will be allowed to deduct from his next premium. What net amount will Miller send to the insurance company as payment for his next year's premium? [4]*

14 Boyer and Bartlett are members of a partnership, with investments of $30,000 and $18,000 respectively. Profits and losses are to be shared in proportion to the partners' investments. Last year the firm made a net profit of $12,560.16. What amount of money did Boyer receive as his share of the net profit? [4]*

15 Holmes went into bankruptcy owing total debts of $86,724. The net cash available for distribution to his creditors amounted to $19,946.52. What amount of money was paid to a creditor with a claim of $10,500? [4]*

16 The village of Dunlap received a revenue of $18,312 from licenses, fines, etc., during 1950. If the village also levied that year a real-estate tax of $31.65 per thousand on property with a total assessed valuation of $3,864,000, what was the total revenue for 1950? [4]*

17 Mann purchased a fire insurance policy on his office building for $35,000 at an annual rate of 28¢ per $100. A five-year policy would cost him four times as much as a one-year policy. What amount would Mann save if he bought a five-year policy instead of five separate one-year policies? [4]*

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* *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 that contains an error in method and an error in computation.]