

The University of the State of New York

312<sup>TH</sup> HIGH SCHOOL EXAMINATION

**BUSINESS ARITHMETIC**

Tuesday, June 19, 1951 — 9.15 a. m. to 12.15 p. 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 *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]

b Compute the interest: [5]

160 lb. at $87\frac{1}{2}\phi$ per lb. = \$	\$960 for 60 days at 2% = \$
360 bu. at \$1.25 per bu. = \$	\$400 for 18 days at 3% = \$
80 bu. at 45 $\phi$ per bu. = \$	\$1800 for 30 days at 5% = \$
6000 lb. at \$7 per ton = \$	\$20 for 312 days at 6% = \$
21 ft. at 60 $\phi$ per yd. = \$	\$640 for 90 days at 4% = \$

c Complete each of the following statements: [5]

58.4 multiplied by 100 is .....

At 20 $\phi$  each, we can buy ..... articles for \$10.

300% of 84 is .....

$\frac{1}{4}\%$  of \$1200 is \$.....

If an article costing \$24 is sold for \$30, the per cent of gain based on the selling price is .....%.

d Complete the following summary of election district returns: [No Partial Credit] [5]

<i>District</i>	<i>Brown</i>	<i>Gates</i>	<i>Totals</i>
First	384	269	
Second	195	215	
Third	223	314	
Fourth	276	262	
<i>Totals</i>			

# BUSINESS ARITHMETIC

Tuesday, June 19, 1951

Write at top of first page of answer paper (a) name of school where you have studied, (b) number of weeks and recitations a week in business arithmetic.

The time requirement is four or five recitations a week for a school year.

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 In 1949, Gregg's monthly heating bill averaged \$18.50. In 1950, it averaged \$19.98. What was the per cent of increase?

b What single per cent of discount is equal to a series of discounts of 30% and 10%?

c Hanscomb, who does piece work in a factory, has been producing an average of 840 units per day. By using a more efficient method of working, he is able to increase his output by 15%. How many units per day does Hanscomb now produce on the average by using the new method?

d On a graph showing sales made, a one-inch line represents \$500. How many inches long would a line need to be in order to represent \$2750?

e An agent bought goods for Alexander for \$2018 and charged him \$302.70 commission on this purchase. What per cent of commission did the agent charge Alexander?

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 118.6; 93.742; 374.21; 11.009

b Subtract 311.87 from 409.2

c Divide 1492.484 by 211.4

d Multiply 386.4 by 1.002

e Using the four-step process, multiply  $26\frac{1}{3}$  by  $6\frac{1}{2}$

f Add  $9\frac{1}{2}$ ;  $3\frac{2}{3}$ ;  $11\frac{4}{5}$ ;  $2\frac{1}{6}$

g Divide  $6\frac{5}{8}$  by  $5\frac{1}{8}$

h Express  $1\frac{3}{4}$  as a decimal correct to the *nearest thousandth*.

i Change 5 yd. 2 ft. 9 in. to inches.

j Subtract  $21\frac{1}{8}$  from 70.

5 Shelton's New York State income tax return for 1950 showed a total income for the year of \$5286. He was entitled to deduct the following exemptions:

Head of family.....	\$2500.00
Taxes paid .....	352.00
Interest on debts .....	19.00
Contributions to church and charity...	115.00
Miscellaneous .....	82.00

His remaining net taxable income was subject to a tax of 2% on the first \$1000 and 3% on the next \$2000 or any fraction thereof. What was the total of Shelton's New York State income tax? [10]\*

6 A merchant bought a shipment of 250 men's coats at \$24 each. He marked them up 25% on the cost and sold 170 of them at that price. At what price each were the remaining coats sold if the merchant made a gross profit of 20% on the cost of the entire transaction? [10]\*

\$4500.00	September 7 19 50
Ninety days after date <u>  I  </u> promise to pay to the order of	
James Dalton	
Four thousand five hundred and $\frac{00}{100}$ Dollars	
With interest at <u>  4  </u> %	
[Signed] Thomas Underwood	

7 On November 16, 1950, Mr. Dalton discounted the above note at his bank. The rate of discount was 6%. What amount did Mr. Dalton receive as proceeds from discounting this note? [10]\*

**Part III**

**Answer any four questions from this part.**

8 Birchall insured his house for \$10,000 with the ABC Insurance Company and for \$6,000 with the XYZ Insurance Company. A fire loss of \$3264 occurred. What amount of money should Birchall collect from each of the two insurance companies? [6]\*

9 The assessed valuation and the city tax rate on a piece of real estate were as follows:

	<i>Assessed Valuation</i>	<i>Rate per \$1000 of Assessed Valuation</i>
1947	\$9,000	\$30.20
1948	\$10,500	\$31.40
1949	\$11,000	\$32.10

What were the *average yearly* taxes paid by the owner of this property for the three-year period? [6]\*

10 When buying a new delivery truck costing \$2,800, Wilson turned in his old truck and received a trade-in allowance of \$700. The carrying charge was 8% of the unpaid balance. The unpaid balance and carrying charge was paid by Wilson in 12 equal monthly installments. How much money did he pay in each installment? [6]\*

11 Keefe bought a house for \$11,500 cash. He rented it to a tenant for \$90 a month. During the first year he owned the house, Keefe paid the following expenses:

Taxes .....	\$243.50
Repairs .....	92.75
Insurance and other expenses...	46.90

What rate of net income, to the *nearest tenth* of a per cent, did Keefe make on his investment during the first year of ownership? [6]\*

12 Ferguson's electric meter read 6,873 kw-hr on April 1 and 6,988 kw-hr on May 1. He paid the following rates for electricity:

The first 30 kw-hr at  $5\frac{1}{2}\phi$  per kw-hr

The next 50 kw-hr at  $5\phi$  per kw-hr

The remaining kw-hr at  $4\phi$  per kw-hr

What was the amount of Ferguson's electric bill for April? [6]\*

**Part IV**

**Answer any four questions from this part.**

13 Harrison is employed at the Emerson Glove Company on a piecework basis and is paid  $6\phi$  for each piece completed and accepted. During a recent week he completed the following number of pieces:

Monday ..... 210

Tuesday ..... 231

Wednesday ..... 190

Thursday ..... 216

Friday ..... 189

A total of 11 pieces of work were not accepted. What were Harrison's total earnings for that week? [4]\*

14 A train left Grand Central Terminal in New York City at 1.30 p. m. and arrived in Albany, New York, at 4.50 p. m. The train stopped at Harmon, New York, for 20 minutes to change engines. The distance from Grand Central to the Albany station is 142 miles. What was the average speed in miles per hour which this train travelled, correct to the *nearest tenth of a mile*? [4]\*

15 Miss Kent, a hosiery saleswoman, is paid a salary of \$30 per week and 8% commission on all sales in excess of a weekly quota of \$200. Last week her total sales amounted to \$312. What were Miss Kent's total earnings for that week? [4]\*

16 During the year 1950, the partnership of Abbott and Warren had total sales of \$316,846. The cost of the goods sold was \$289,527. Operating expenses were \$17,819. Abbott received 65% of the net profit as his share for the year. What amount of money did he receive? [4]\*

17 A radio which cost \$350 when new had a trade-in value of \$161 after 6 years of use. What was the average annual *per cent* of depreciation? [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.]