

The University of the State of New York  
281ST HIGH SCHOOL EXAMINATION  
**BUSINESS ARITHMETIC**  
Tuesday, June 17, 1941 — 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 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

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1-2 a Complete the following sales record: [5]

	Smith	Jones	Total
January	\$ 87	\$ 68	\$
February	235	197	
March	649	456	
April	1 028	872	
May	871	784	
June	564	1 243	
<b>Total</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>

b Compute the interest: [5]

\$150 for 36 days at 6 % =  
 \$1800 for 90 days at 5 % =  
 \$437 for 4 months at 3 % =  
 \$360 for 50 days at 4½% =  
 \$120 for 47 days at 6 % =

c Make the extensions: [5]

96 yd @ \$1.12½ =  
 72 bu. @ 83⅓¢ =  
 360 gal. @ 66⅔¢ =  
 280 lb @ 75 ¢ =  
 2400 ft @ 1¼¢ =

d Underline the correct answer for *each* of the following: [5]

½% expressed as a decimal is (.0002, .002, .02, .2)  
 18 is what per cent of 9? (5%, 50%, 100%, 200%)  
 ⅓ ÷ ⅓ = (⅔, 1⅓, ⅘, 1)  
 60 is ¼ more than (80, 45, 48, 75)  
 2½¢ per pound is equivalent to (\$25, \$5, \$50, \$500) per ton.

# BUSINESS ARITHMETIC

Tuesday, June 17, 1941

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

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

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 What single discount equals the discount series 25% and 10%?
- b The senior class purchased chocolate bars at 80 cents a box (24 bars) and sold them at 5 cents a bar. What per cent of the selling price was gained?
- c An article listed at \$30 is sold for \$24. What is the rate of discount?
- d A real estate agent, on a 5% commission basis, received \$500 for selling a piece of property. What was the selling price of the property?
- e At a scale of  $\frac{1}{8}$  inch equals 1 foot, what would be the dimensions of a diagram of a building foundation 60 feet by 112 feet?

4 Jackson inherited \$12,000, which he deposited with a brokerage firm for investment.

- a How many \$1000 railroad bonds, bearing interest at the rate of 4%, can they buy for him at \$1080 each, if the brokerage is \$2.50 per bond? [4]
- b How much money will be returned to him? [2]
- c What rate of income, to the nearest tenth of a per cent, will he receive on his actual investment? [4]

5 Hill, a salesman, received a salary of \$100 a month, a 1% commission on all his sales and an additional commission of 2% on all monthly sales in excess of \$3000. His sales for January were \$6000, February \$4500 and March \$7400.

- a What was Hill's total income for the three months? [8]
- b What was his average monthly income? [2]

6 A mechanic is working on a defense project where his regular time is 8 hours a day for 5 days a week, Monday through Friday. He receives time and a half for overtime on those days and double time for all work done on Saturdays and Sundays. His regular wage is \$1.50 an hour. Last week he worked 9 hours a day for the seven days.

- a What was the amount of his regular wages for the week? [2]
- b What were his total earnings? [8]

7 A merchant bought goods invoiced at \$1860, terms  $\frac{3}{10} \frac{n}{90}$ . He did not have the money to pay the bill but wished to take advantage of the discount. How much did he save by borrowing the necessary amount of money for 80 days at 6%? [10]

BUSINESS ARITHMETIC — *concluded*

8 A factory owner is choosing between two machines with equal output. The first machine costs \$2000 and has a trade-in value of \$300 at the end of 4 years. The second machine costs \$2400 and has a trade-in value of \$500 at the end of 5 years. Considering average annual depreciation and 5% interest on the investment, find

- a The annual cost of ownership of the first machine [4]
- b By how much the annual cost of ownership of the second machine will differ from that of the first [6]

9 Brown's electric bill showed meter readings of 1232 kw-hr on February 5 and 1484 kw-hr on March 5. His rate schedule listed the first 12 kw-hr or less for \$1, the next 30 kw-hr at 5.5¢ per kw-hr, the next 58 kw-hr at 4¢ per kw-hr, the next 100 kw-hr at 3¢ per kw-hr and the balance at 2¢ per kw-hr. What was the amount of his bill for the month ending March 5? [10]

10 On his state income-tax blank for the year 1940, James Owen listed the following as income received: salary for the year \$5500; interest on bank deposits \$80; interest on bonds \$120; dividends received from stocks \$48. He claimed the following deductions: interest on mortgage \$300; taxes \$294; contributions to church, war-relief agencies and community chest which total \$150. The law entitles Mr Owen to a deduction of \$2500 as a married man and \$400 for each of two dependent children.

- a Find the amount on which Mr Owen will have to pay a tax. [4]
- b What will be the amount of his income tax if the rate is 2% on the first taxable \$1000 and 3% on the next \$1000 or portion thereof? [6]

11 On April 24, 1941, James Hardy was advised by his bank that he had overdrawn his account \$43.67. He immediately discounted at 6% a customer's two-months note for \$936 dated April 5, 1941, bearing interest at 5%.

- a What were the proceeds of the discounted note? [8]
- b What was Hardy's new bank balance? [2]

12 A clothing merchant bought 48 suits at \$15 each and marked each suit to sell at a profit of 40% on the cost. At the end of the season he had 8 suits left. To what price may he reduce each suit and still make a profit of 35% on the cost of the 48 suits? [10]