The University of the State of New York

318TH HIGH SCHOOL EXAMINATION

# BUSINESS ARITHMETIC

Monday, June 15, 1953 — 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 for Part I

*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.

## Scrap paper may not be used, nor may computations be made on the question paper.

# RAPID CALCULATION TEST

1–2 *a* Subtract: [2]

$$8\,7\,1$$
$$3\,8\tfrac{3}{5}$$

_____

*b* Make the following extensions: [5]

120 bushels at 25¢ per bushel = $ _____

540 pounds at 16⅔¢ per pound = $ _____

320 bushels at $2.50 per bushel = $ _____

40 pounds at 65¢ per pound = $ _____

3000 pounds at $16 per ton = $ _____

*c* Compute the interest: [5]

$360 for 60 days at 2% = $ _____

$1800 for 30 days at 6% = $ _____

$1200 for 80 days at 3% = $ _____

$840 for 2 months at 1½% = $ _____

$2947 for 6 days at 6% = $ _____

*d* Complete each of the following statements: [4]

29.643 multiplied by 100 is _____ .

½% of $960 is $ _____ .

If an article costing $80 is sold for $60, the per cent of loss, based on the cost, is _____%.

A 2% sales tax on an article marked at $15 would make the total price $ _____ .

*e* Complete the following report of workers in a factory. [No partial credit allowed] [4]

| Department | Men | Women | Total |
|---|---|---|---|
| A | 312 | 87 | |
| B | 491 | 564 | |
| C | 408 | 327 | |
| Total | | | |

# BUSINESS ARITHMETIC

## Monday, June 15, 1953

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. ALL WORK MUST BE SHOWN.] [10]

    *a* What single per cent of discount is equal to a series of discounts of 30% and 20%?

    *b* A sales clerk earned a weekly salary of $20 and was also paid a commission of 10% on all sales. If his sales last week amounted to $277, what was the total amount of his earnings for that week?

    *c* In the 1951–52 basketball season, a certain high school team scored a total of 420 points against all opponents. In the following season, the team for this same high school scored a total of 483 points. What was the per cent of increase in points scored?

    *d* A typewriter cost $180 when new. After six years of use, it had a trade-in value of $81. What was the amount of the average annual depreciation on this typewriter?

    *e* An invoice for $350 may be fully settled by paying $339.50 within 10 days from the date of the invoice. What per cent of cash discount is being allowed?

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 312.48; 10.963; 14.72; 103.002

    *b* Subtract 297.46 from 583.984

    *c* Divide 30.732 by 118.2

    *d* Multiply 265.1 by 10.4

    *e* Multiply $56\frac{1}{4}$ by $9\frac{1}{8}$

    *f* Add $9\frac{2}{3}$; $12\frac{5}{6}$; $5\frac{4}{9}$; $11\frac{1}{2}$

    *g* Divide $17\frac{2}{3}$ by $2\frac{3}{4}$

    *h* Subtract $5\frac{7}{8}$ from $9\frac{3}{16}$

    *i* Express $\frac{2}{7}$ as a per cent correct to the *nearest tenth* of a per cent.
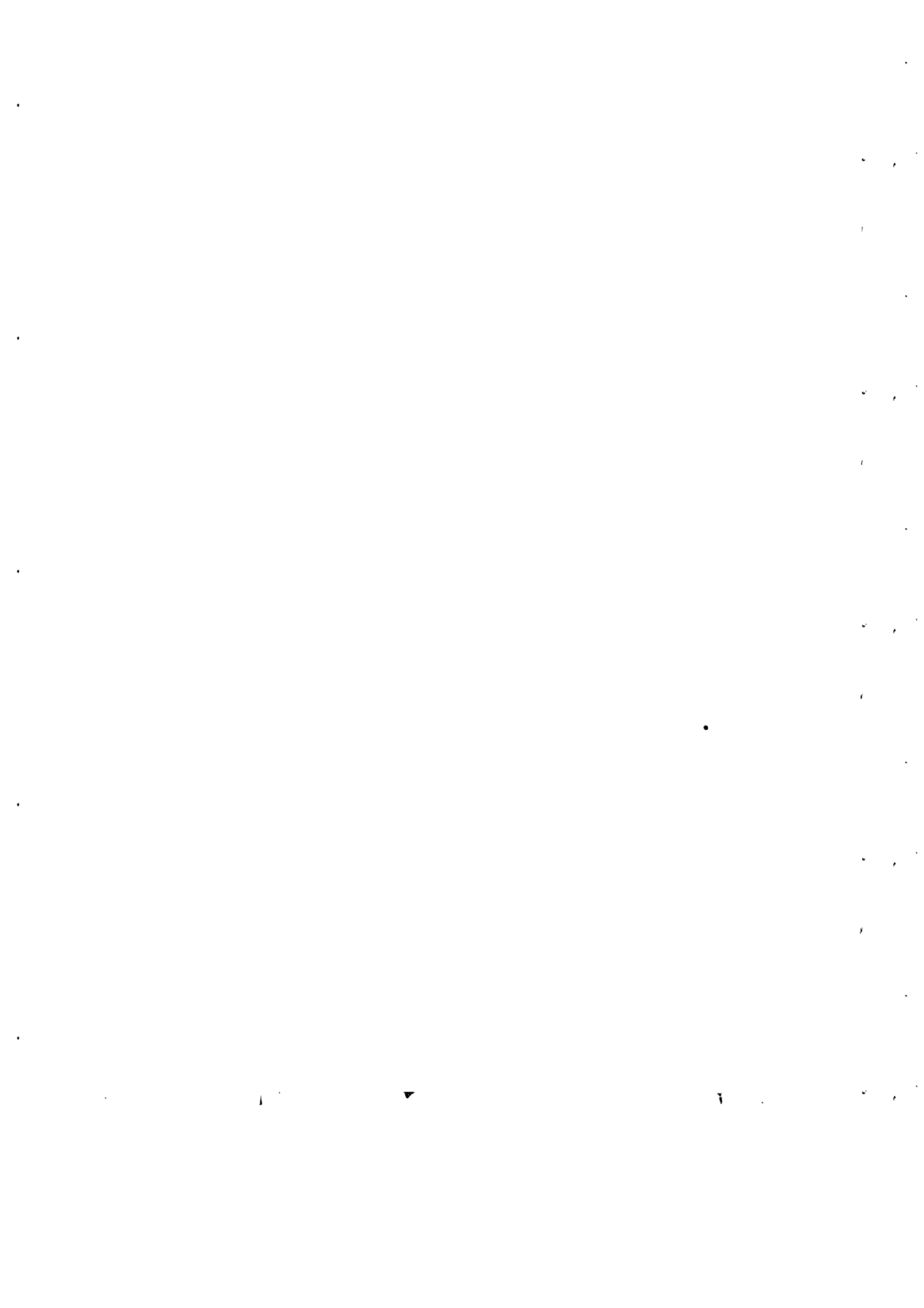
    *j* Express .315 as a common fraction in lowest terms.

5 Davies purchased an apartment house for a total cost of $80,000, paying $50,000 cash and giving a mortgage for the balance. This building contained eight apartments, each of which was rented for $75 per month. At the end of one year from the time Davies bought the building, his expenses in connection with owning it were as follows:

Interest at 6% on the mortgage of $30,000
Insurance on the building................... $150
Taxes ...................................... $1200
Repairs, depreciation and other expenses........ $550

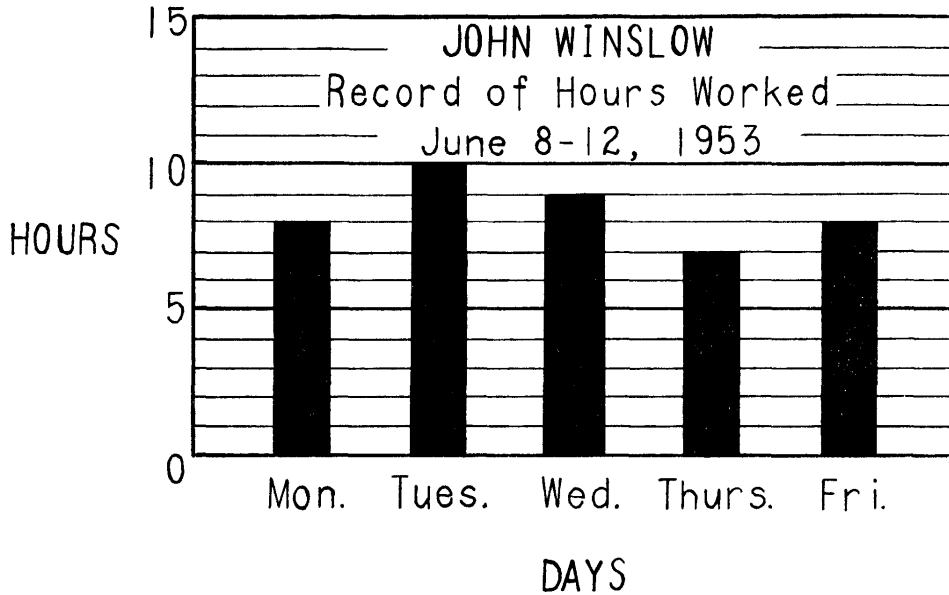What annual per cent of net return did Davies earn on his cash investment? [10]*

6 On July 15, 1952, Blaine discounted at his bank a customer's three-month promissory note, dated July 3 and bearing interest at the rate of 4%. The face of this note was $1200. The rate of discount charged by the bank was 6%. What amount of money did Blaine receive as net proceeds from this note? [10]*

7 Winslow is employed as a factory worker on an eight-hour-per-day basis, with time-and-a-half for overtime. His pay rate is $1.80 per hour. The bar graph below shows the number of hours he worked during a recent week.



Using the information given above, answer the following questions.

a On which day did Winslow work the greatest number of hours? [1]

b On which two days did he work the same number of hours? [2]

c For which days did he receive pay for overtime? [2]

d On which day did he work the fewest number of hours? [1]

e What were his total earnings for the week? [4]*

## Part III

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

8 Foster can buy a refrigerator for $240 cash or on the installment plan by paying $80 down and the balance in 12 equal monthly installments of $16 each. If he pays cash, he will need to borrow the necessary funds from a finance company at a total cost of $15 for interest and carrying charges. How much will he save by choosing the less expensive of the two purchase plans? [6]*

9 Keeley, a furniture dealer, bought a desk for $75 and, in addition, paid $10 freight on his purchase. His operating expenses amount to 20% of sales. At what price should he sell this desk in order to make a net profit of 12% of its selling price? [6]*

10 Schafer's electric meter read 6387 kilowatt-hours on March 1 and 6549 kilowatt-hours a month later. He was charged 5½¢ per kilowatt-hour for the first 100 kilowatt-hours used and 5¢ for each kilowatt-hour in excess of 100. What was the total amount of his electricity bill for the month? [6]*

[4]

11 Sweet sold merchandise for $2950 through a commission merchant. The agent's commission fee was 8%. Other expenses connected with the transaction were as follows:

| | |
|---|---|
| Freight | $26.50 |
| Storage | 19.75 |
| Telephone and telegraph | 8.25 |

What amount of money did Sweet receive as net proceeds for this sale? [6]*

12 Turner and Revelle formed a partnership at the beginning of 1952, with investments of $15,000 and $5,000 respectively. The partnership agreement provided that the annual net profit was to be divided as follows:

Each partner was to receive 5% interest annually on his investment.
All remaining profit was to be divided equally.

The firm's net profit for 1952 was $3850. What is the amount of each partner's share of the net profit? [6]*

## Part IV
### Answer any four questions from this part.

13 A student's daily marks for the first nine days of a ten-day period were 90%, 80%, 75%, 85%, 60%, 95%, 100%, 85% and 90%. What mark did he receive on the tenth day, if his average mark for the entire ten days was 85%? [4]*

14 Fredericks insured his office building for $27,000 with the Reliable Insurance Company and for $36,000 with the Hudson Insurance Company. If a fire loss of $16,100 occurred, what amount of money should Fredericks collect from the Reliable Insurance Company? [4]*

15 On May 1, 1953, Thomas Jackson's bank statement showed a balance of $612.86. His checkbook balance was $496.78. Checks outstanding were for $50; $42.50; and $25.58. In addition, enclosed with the bank statement was a service charge slip for $2 which the bank had deducted. Prepare a reconciliation statement and indicate the correct available checkbook or bank balance. [4]*

16 Lee can buy merchandise from the Superior Manufacturing Company for $200 less 25% and 15%. The Granville Sales Corporation offers him similar merchandise for $200 less 30% and 10%. What amount of money will he save by taking the better of the two offers? [4]*

17 Roberts owns a house and lot assessed at $7500. The real-estate tax rate in his community this year was 31 mills per dollar. What amount of money did Roberts pay as tax on his property? [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.]