BUSINESS ARITHMETIC

Tuesday, June 15, 1943 — 9.15 a. m. to 12.15 p. 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 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

1–2 *a* Add the following: [4]

3 6 2 5
1 7 6 3
3 8 2 7
4 9 3 6
1 7 0 9
5 6 4 2
2 3 6 3
  8 2 7
3 8 4 8
6 3 5 6
  4 7 9
4 2 5 8
1 9 6 7
8 2 0 3
2 3 7 1
4 9 2 5

b Make the extensions: [5]

$83\frac{1}{3}$ gallons at 36¢ =

175 articles at 28¢ =

750 lb. at \$12 a ton =

25 bushels at \$1.25 =

160 yards at 75¢ =

c Compute the interest on *each* of the following: [5]

\$142 for 90 days at 6 % =

\$300 for 78 days at 6 % =

\$420 for 15 days at 4 % =

\$240 for 20 days at 3 % =

\$160 for 3 months at $1\frac{1}{2}$% =

d Complete *each* of the following: [6]

48 is 150% of ......

.0125 may be expressed as ...... %.

A tax rate of \$28.40 per \$1000 is equivalent to \$...... per \$100.

1.25 divided by .25 is ......

$\frac{3}{8}$% expressed as a decimal is ......

90 is ...... % of 60

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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 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 Merchandise was reduced 25% and then sold for $360. What was the amount of the reduction?

   b What single rate of discount is equivalent to the series 20% and 15%?

   c On March 5 Ransom discounted a two-months note dated March 1. For how many days did the bank charge him discount?

   d Smith earns $50 weekly. If 1% is deducted for social security, and 5% for Victory Tax, how much will he actually receive?
      [Victory Tax computed at 5% of total earnings in excess of $12 a week.]

   e A war bond bought today for $75 will mature in 10 years and be worth $100. How many of these bonds must we buy today in order that their maturity value shall be $1200?

4 An electric drill that cost $50, less 20% and 10%, was formerly sold by a hardware store for $48. The cost of the drill was increased to $60, less 20% and 5%. At what price must the drill now be sold in order to make the same rate of profit? [10]

5 Kane, a buyer of used cars, receives a monthly salary of $150 and a 6% commission on all cars bought. In addition, he receives a commission of $1\frac{1}{2}\%$ on purchases in excess of $4000 a month. His purchases of used cars amounted to $3800 in April and to $5240 in May.

   a Find Kane's total commission for the two months. [6]

   b Find his average monthly income for the two months. [4]

6 Martin's house is valued at $6000. He insured it for $4000 under a policy containing the 80% coinsurance clause. The insurance agent quoted a rate of 18¢ per $100 for a one-year policy or $2\frac{1}{2}$ times the yearly rate for a three-year policy.

   a How much premium would Martin pay for a one-year policy? [2]

   b What would be the average annual cost of a three-year policy on the house? [4]

   c If fire should cause a $3000 loss to the house, how much would Martin receive under his policy? [4]

7 A used machine is offered to a defense plant for $720 cash, or $180 cash and $49.80 a month for 12 months.

   a By what per cent does the instalment price exceed the cash price? [6]

   b What would the defense plant save by borrowing at 6% for 12 months the money needed to pay the complete cash price? [4]

8 Brown buys a house for $5500, paying $1000 cash and giving a 5% mortgage for the balance. He insures the house for $4500 at the rate of $.50 per $100 for 3 years. It is assessed at $4750, with a tax rate of 18 mills per $1. He estimates the annual repairs and depreciation at 3% of the cost of the house.

> a Find the total annual expense of owning the house. [6]
>
> b If Brown desires a 6% return on his cash investment, find the monthly rental he must charge. [4]

9 A furniture company purchased 180 hickory chairs at $3.60 each. After the chairs had been marked up 50% on the cost, 13 dozen were sold. What should be the selling price of each of the remaining chairs so that the company's profit will be 40% of the total cost of all the chairs purchased? [10]

10 On March 10, 1943, Jordan submitted the following facts on his State income-tax blank: salary $3750, interest on bank deposits $135, dividends from stock $160, interest on bonds $570, commissions and bonus $510. He claimed the following deductions: real estate taxes $195, interest on mortgage $275, contributions $235. Being married, with two children, Jordan is allowed an exemption of $2500 as the head of a household and $400 for each child. The tax rate is 2% on the first taxable $1000 and 3% on the next $2000 or fraction thereof. The State permits a deduction of 25% from the original tax as computed.

> a What was the amount of Jordan's net income? [2]
>
> b What was the amount of the tax that Jordan must pay to the State? [8]

11 The Alder Company sent by parcel post to the 6th zone 5 packages weighing, respectively, 13 ounces, 1 pound 2 ounces, 3 pounds 4 ounces, 5 pounds 1 ounce, and 6 pounds 8 ounces. The rate for the 6th zone is 12¢ for the first pound or fraction thereof and 7¢ for each additional pound or fraction thereof. Find the total parcel-post charges for the 5 packages. [10] [This is an accuracy problem; no partial credit allowed.]

12 The Federal Savings Bank pays interest on deposits at the rate of $1\frac{1}{2}$% annually. It adds interest to the depositor's accounts on April 1 and October 1. No interest is paid on fractional parts of a dollar. On October 1, 1941, Clarkson deposited $460. On October 1, 1942, he made an additional deposit of $120.

> a How much did Clarkson have on deposit on April 1, 1943? [8]
>
> b How much interest was added to his account from October 1, 1941 to April 1, 1943? [2]