

The University of the State of New York

284TH HIGH SCHOOL EXAMINATION

**ARITHMETIC**

Wednesday, June 17, 1942 — 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.*

*Answer all questions in part I and five questions from part II.*

*Part I is to be done first and the maximum time to be allowed for this part is one and one half hours. Merely write the answer to each question on the line at the right; no work need be shown.*

If you finish part I before the signal to stop is given you may begin part II. However, it is advisable to look your work over carefully before proceeding to part II, since *no credit will be given any answer in part I which is not correct and reduced to its simplest form.*

When the signal to stop is given at the close of the one and one half hour period, work on part I must cease and this sheet of the question paper must be detached. The sheets will then be collected and you should continue with the remainder of the examination.

# ARITHMETIC

## Part I

Answer all questions in this part. Write the answer to each question on the dotted line at the right. Each question has 2 credits assigned to it; no partial credit will be allowed. Each answer must be reduced to its simplest form.

- |  |         |
|--|---------|
| 1 Add 36.28; 647.05; 7.98; 83  | 1.....  |
| 2 Multiply 47.58 by 93.6   | 2.....  |
| 3 Divide 106.75 by 2.5   | 3.....  |
| 4 Add $3\frac{1}{2}$ ; $2\frac{3}{4}$ ; $\frac{1}{8}$  | 4.....  |
| 5 From $6\frac{1}{2}$ subtract $4\frac{1}{4}$  | 5.....  |
| 6 Write the number <i>fifty billion</i> .  | 6.....  |
| 7 What is the perimeter of a square having an area of 36 square feet?  | 7.....  |
| 8 How much will a 2% sales tax be on an article costing \$2.50?  | 8.....  |
| 9 A boy spends 50% of his salary for board and room, 30% for other expenses and the rest for defense stamps. What per cent of his salary does he spend for stamps?                 | 9.....  |
| 10 There are 35 pupils in a certain eighth grade. If 28 buy tickets for a play, what per cent of the pupils in this grade purchase tickets?  | 10..... |
| 11 If a boy averages 4 hits out of every 5 shots in target practice, how many hits will he score in 40 shots?  | 11..... |
| 12 One barrel of flour can be made from $4\frac{3}{4}$ bushels of wheat. How many bushels of wheat will be needed for 380 barrels of flour?  | 12..... |
| 13 Of the following, which is the largest number: 1.5, $1\frac{1}{8}$ , $\frac{8}{9}$ ?  | 13..... |
| 14 In 1930 the population of the United States was 122,775,046 and in 1940 it had risen to 131,669,275. How much did the population increase during the 10-year period?            | 14..... |
| 15 Natural rubber costs about 20 cents a pound to produce; manufactured or synthetic rubber costs about 30 cents a pound to produce. What is the difference in cost per short ton? | 15..... |
| 16 In a class there are 7 boys and 14 girls. What is the ratio of the number of boys to the number of girls?   | 16..... |
| 17 What is the money paid for insurance called?  | 17..... |
| 18 How much profit will you make on a dozen chocolate bars if you buy them for 42 cents a dozen and sell them at 5 cents apiece?   | 18..... |
| 19 Represent the cost of 5 pencils which cost $c$ cents apiece.  | 19..... |
| 20 Does an acute angle contain <i>more</i> or <i>less</i> than $90^\circ$ ?  | 20..... |
| 21 What is the area of a triangle whose base is 10 inches and whose altitude is 6 inches?  | 21..... |
| 22 Is the interest on \$120 for 30 days at 6% approximately \$1, \$.75, \$.60 or \$.30?  | 22..... |
| 23 Mary is $n$ years old. Jane is two years younger. Express Jane's age in terms of $n$ .  | 23..... |
| 24 What fractional part of a pound is 12 ounces?   | 24..... |
| 25 A commission agent receives a commission of 4% on sales. How much will he receive on sales amounting to \$400?  | 25..... |



# ARITHMETIC

Wednesday, June 17, 1942

Write at top of first page of answer paper to part II (a) name of school where you have studied,  
(b) grade of work completed in arithmetic.

The minimum requirement is the completion of the work of the eighth grade in arithmetic.

## Part II

Answer any five questions from this part. No credit will be allowed unless all necessary operations are given. Reduce each result to its simplest form and mark each answer *Ans.*

26 Mr White had a water faucet that leaked constantly for many months. Upon measuring the water leaking from the faucet, he found that it would fill a gallon jug in one hour. The water rate which Mr White paid was 50 cents per 1000 gallons.

- a How many gallons of water were lost in one year (365 days) because of the leak? [3]
- b How much did Mr White have to pay for the water that leaked away during the year? [6]
- c A plumber would have repaired the faucet one year ago for \$1.25. How much could Mr White have saved? [1]

27 Suppose each of the 13,000,000 school children in the United States bought one 10-cent defense stamp each week for a year (52 weeks) to help our country purchase pursuit planes which cost \$10,000 each.

- a How much money would each school child pay to the government for defense stamps during the year? [2]
- b How much would all the school children pay to the government for defense stamps during the year? [2]
- c How many pursuit planes could be purchased with the money received? [6]

28 Mr Smith purchased a farm for \$10,000. He paid out \$180 for taxes, \$560 for repairs and \$260 for painting. At the end of one year he sold the farm for \$12,000.

- a How much did he spend for taxes, repairs and painting? [2]
- b How much profit did he make on the transaction? [3]
- c Find the rate of interest he received on his original investment. [5]

29 Tom Jones borrowed \$100 from a finance loan company for a period of 6 months. He is to repay this loan in 6 monthly payments of \$18.15 each. He could have borrowed the money from a bank at an interest rate of 6% per year.

- a What is the total amount that must be repaid to the finance loan company? [3]
- b Of this amount, how much is charged for interest? [3]
- c How much interest would a bank have charged for the use of the money for 6 months? [4]

30 A girl works in a store, where she earns a salary of \$15 a week. In addition, she is paid a commission of 4% on all sales over \$150 for the week. During a recent week she sold \$210 worth of goods. How much were her total earnings for the week? [10]

31 Mr Smith wishes to insure his house worth \$10,000 for 80% of its value. He can purchase a one-year policy at \$12 per \$1000 or a five-year policy at \$48 per \$1000.

- a For what amount would the house be insured? [2]
- b What would be the premium on the one-year policy? [3]
- c What would be the premium on the five-year policy? [3]
- d What would be the difference in the cost of the two policies over a five-year period? [2]

32 a Solve each of the following for  $x$ :

$$6x - 9 = 21 \quad [2]$$

$$\frac{x}{5} - 2 = 3 \quad [2]$$

$$x + 2 = 5 - 2x \quad [2]$$

b If  $a = 4$ ,  $b = 7$ ,  $c = 9$  and  $d = 10$ , find the value of  $4a - 2b + c - d$  [2]

c Collect similar terms:

$$2x + 2y - 3x - 3y + 4x \quad [2]$$

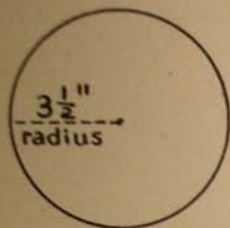


Figure 1

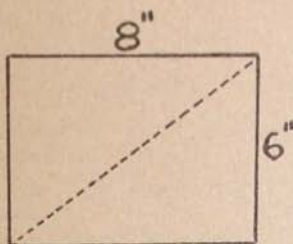


Figure 2

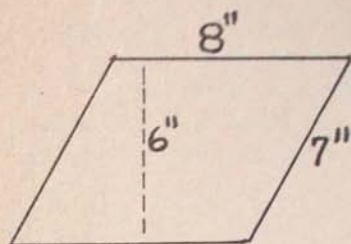


Figure 3

33 a Find the area of each of the figures shown above. [6]

b What is the length of the diagonal in figure 2? [2]

c What is the perimeter of figure 3? [2]