

The University of the State of New York

286TH HIGH SCHOOL EXAMINATION

ARITHMETIC

Wednesday, January 20, 1943 — 9.15 a. m. to 12.15 p. m., only

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Fill in the following lines:

Name of school.....Name of pupil.....

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 From 81.75 subtract 73.5 1.....
- 2 Multiply 38.76 by 57.6 2.....
- 3 Add 748; 69.37; 46.4; 36.23 3.....
- 4 Divide  $\frac{3}{8}$  by  $\frac{1}{4}$  4.....
- 5 From  $4\frac{1}{2}$  subtract  $3\frac{1}{4}$  5.....
- 6  $3\frac{1}{2} \times 6\frac{2}{3}$  6.....
- 7 Write eight million four hundred fifty thousand four hundred in figures. 7.....
- 8 Find the area of a table top that is 41 inches long and 25 inches wide. 8.....
- 9 George gave the clerk a five-dollar bill to pay for two dozen eggs at 48 cents a dozen. How much change should he receive? 9.....
- 10 If 21 eggs out of 24 hatched, what per cent of the eggs hatched? 10.....
- 11 What per cent of 9 is 12? 11.....
- 12 A rural mail carrier drives 240 miles a week. At 16 miles per gallon, how many gallons of gasoline per week does he use? 12.....
- 13 Find the volume of a coalbin 9 feet long, 6 feet wide and 5 feet high. 13.....
- 14 A book listed at \$2 is sold to the school at a discount of 25%. What is the selling price? 14.....
- 15 If dry beans are packed in 2-pound packages, how many full 2-pound packages can be obtained from 11 pounds of dry beans? 15.....
- 16 What is the ratio of one side of a square to the perimeter of the square? 16.....
- 17 How much would you have to pay for the use of \$500 for 3 months at 5% interest? 17.....
- 18 What is the answer obtained in multiplication called? 18.....
- 19 A grocer bought one dozen jars of peanuts for \$2.28 and sold them at 23 cents a jar. How much profit did he make on the dozen jars? 19.....
- 20 A salesman receives a 5% commission on his sales. If his sales for the past week were \$800, how much did he receive? 20.....
- 21 If  $a = 2$  and  $b = 3$ , what does  $4a - b$  equal? 21.....
- 22 Express algebraically the number of days there are in  $x$  weeks. 22.....
- 23 How many degrees are there in a semicircle? 23.....
- 24 What is the circumference of a circle whose radius is 7 feet? 24.....
- 25 The scale of miles on a certain map is 1 inch = 60 miles. What is the distance between two cities that are  $4\frac{1}{2}$  inches apart on the map? 25.....

# ARITHMETIC

Wednesday, January 20, 1943

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 Pupils of four classes invested during September in War Saving Stamps as follows:

In the first class 35 pupils each invested an average of 40 cents per month.

In the second class 36 pupils each invested an average of 50 cents per month.

In the third class 32 pupils each invested an average of 35 cents per month.

In the fourth class 40 pupils each invested an average of 37 cents per month.

a How much was invested by each class during the month? [4]

b What was the total amount invested in War Savings Stamps by these four classes? [2]

c How much would these pupils invest in War Savings Stamps at the same rate during a 10-month school year? [4]

27 A school district with an assessed valuation of \$2,480,500 has a tax rate of \$12 per \$1,000.

a What will be the amount raised by taxes? [4]

b Mr Smith's property in the district is valued at \$8000. His property is assessed for 50% of this value. What is the assessed valuation of his property? [2]

c What is the amount of the school tax he will have to pay on the assessed valuation of this property? [4]

28 A man worked 55 hours one week, in a defense factory, at the rate of \$.80 per hour for the first 40 hours. For every hour over 40 hours he received  $1\frac{1}{2}$  times as much per hour.

a How much was his week's pay? [5]

b If he used 10% of his wages to buy war stamps, how much did he invest in stamps? [5]

29 In an elementary school there are 20 pupils in the first grade, 15 in the second grade, 16 in the third grade, 22 in the fourth grade, 24 in the fifth grade and 25 in the sixth grade. Make a bar or line graph illustrating the number of children in each grade. [10]

30 At the Washington Avenue School, the pupils sold 240 copies of the school paper at 3 cents each. They received \$2.80 for advertising. It cost \$6.50 to print and handle the issue.

a What was the net profit on the issue? [5]

b What per cent of the total income came from advertising? [5]

31 The residential rate for electricity charged by a certain electric company is as follows:

For the first 8 kilowatt-hours  $12\frac{1}{2}$  cents per kilowatt-hour

For the next 27 kilowatt-hours 6 cents per kilowatt-hour

For the next 100 kilowatt-hours  $3\frac{1}{2}$  cents per kilowatt-hour

All over this amount 2 cents per kilowatt-hour

What is the cost of 200 kilowatt-hours of electric energy at this rate? [10]

32 a If  $n$  represents a certain number, write in algebraic form:

- (1) The number increased by 5 [1]
- (2) One half of the number [1]
- (3) Two more than twice the number [1]
- (4)  $x$  times the number [1]

b Write and solve the algebraic equation for the statement: A certain number  $x$  decreased by 4 equals 2. [4]

c Solve the following equation for  $a$ :  $4a = a + 18$  [2]

33 An airplane started on a flight at 7.30 a. m. and arrived at its destination at 11.45 a. m. The air distance covered was 612 miles and 51 gallons of gas were used.

- a How many hours were required for the flight? [2]
- b What was the average air speed in miles per hour? [4]
- c What was the average number of gallons used per hour? [4]