

The University of the State of New York  
278TH HIGH SCHOOL EXAMINATION  
**ARITHMETIC**  
Wednesday, June 19, 1940 — 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 Subtract 2 feet 8 inches from 7 feet 3 inches.   | 1.....  |
| 2 When cans of tomato soup sell at 3 for 25¢, how many cans can you buy for one dollar?  | 2.....  |
| 3 What do we call money paid for the use of money?   | 3.....  |
| 4 If 384 half-pint bottles of milk were sold in the school cafeteria in one day, how many quarts of milk were sold that day?   | 4.....  |
| 5 When Peter left home the speedometer of his car read 16,214.9 miles. When he reached Buffalo it read 16,405.2 miles. How far had he traveled?                                    | 5.....  |
| 6 On three successive days Mary gathered 56 eggs, 48 eggs and 40 eggs. How many dozen did she gather altogether?   | 6.....  |
| 7 A dealer paid 54¢ for a pair of shears listed at 72¢. What was the rate of discount allowed to this dealer?  | 7.....  |
| 8 How many minutes will it take Mr Ware to drive 12 miles at the rate of 30 miles an hour?   | 8.....  |
| 9 If one gallon of milk weighs 8.5885 pounds, find, to the nearest hundredth of a pound, the weight of one quart of milk.  | 9.....  |
| 10 Mary was promised a new summer outfit. This was what she planned to buy: a dress \$5.98, shoes \$5.00, hat \$1.19, stockings \$.79, gloves \$1.29. How much money did she need? | 10..... |
| 11 The toll charge for telephone calls between two cities is 35¢ for the first 3 minutes and 10 cents for each additional minute. At this rate what will a 6-minute call cost?     | 11..... |
| 12 If a space of 18 inches is allowed for each person, how many persons can be seated on 5 rows of bleacher seats each 90 feet long?   | 12..... |
| 13 Using the formula $V = lwh$ , find the value of $V$ when $l = 10$ , $w = 8$ , and $h = 6$ .   | 13..... |
| 14 What plane geometric figure does a sheet of paper from an ordinary tablet represent?  | 14..... |
| 15 Jane had 15 cents and lost $x$ cents. How many cents did she have left?   | 15..... |
| 16 In order to raise money for a class trip, an eighth grade class bought 500 pencils for \$14 and sold them at 5 cents each. How much money did the class make?                   | 16..... |
| 17 If $x + 3 = 7$ , does $x = 4$ , 21 or 10?   | 17..... |
| 18 Jerry makes a profit of 2½¢ on each Sunday paper that he sells. How much profit will he make on 50 Sunday papers?   | 18..... |
| 19 How many degrees are there in each angle of an equiangular triangle?  | 19..... |
| 20 If a discount of 16% is allowed on a tennis racket that ordinarily sells for \$8, what is the sales price?  | 20..... |
| 21 Which is the largest fraction, $\frac{1}{3}$ , $\frac{1}{2}$ or $\frac{1}{4}$ ?   | 21..... |
| 22 Does a telephone pole usually stand in a vertical, horizontal or oblique position?  | 22..... |
| 23 A regulation baseball diamond is a square in which the distance between bases is 90 feet. What is its area?   | 23..... |
| 24 If John can save 25¢ a week, how many weeks will it take him to save \$10?  | 24..... |
| 25 On a certain house plan a line 5 inches long represents 20 feet. How many inches would represent 30 feet?   | 25..... |



# ARITHMETIC

Wednesday, June 19, 1940

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 Henry had 58 chickens to sell. On August 15 they weighed 240 pounds and could have been sold at 23¢ a pound. He kept them until October 1 and fed them at a cost of \$5. He then sold them, a total weight of 265 pounds, at 24¢ a pound. How much did he gain or lose by keeping them? [10]

27 Mary Stevens, a stenographer, paid \$8.40 a year for hospital insurance. She had paid this for nine years when she had to have an appendicitis operation. If her insurance took care of the hospital bill items listed below, how much did she gain by carrying the insurance for the nine years? [10]

Operating room	\$10.00
Semiprivate room 14 days @	4.50 a day
Drugs	3.75
Dressings	2.50
Laboratory	9.25
Ambulance	5.00

28 Mr Jones is planning to build a house. He has saved \$7500. The lot he wants will cost \$1975, and the carpenter has estimated that it will cost \$6300 to erect the house. Grading and other extra expenses will cost \$500.

a How much money will Mr Jones have to borrow? [6]

b At 6%, how much interest will he have to pay per year for the money he borrows? [4]

29 In paying income tax of 4%, an unmarried man is allowed \$1000 exemption for himself. A married man is allowed an exemption of \$2500 for himself and wife, plus \$400 for each of his children.

a How much income tax must Mr Smith, who is unmarried, pay if he receives an annual salary of \$2000? [4]

b How much income tax must Mr Jones, who is married and has three children, pay if he receives an annual salary of \$4800? [6]

30 In a recent year the United States produced about 14,400,000 bales of cotton, which sold for \$756,000,000.

a At that rate, what was the value of a bale of cotton that year? [5]

b There are about 500 pounds in a bale of cotton. What was the average price of a pound of cotton that year? [5]

31 Suppose your left home on a bicycle at 10.00 a. m. and rode to a village 24.5 miles away, arriving there at 3.30 p. m. If you stopped 2 hours to rest and eat lunch, what was the average speed per hour at which you traveled? [10]

32 a Select the equation that correctly expresses the relationship expressed in each of the following problems:

- (1) After traveling a distance of 160 miles, a man still had 80 miles to go in order to reach his destination. What was the distance he had planned to cover?  
 $80d = 160$ ;  $80 + d = 160$ ;  $d - 160 = 80$  [2]
- (2) The area of a rectangle is 252 square inches. If the width is 14 inches, what is the length?

$$14l = 252; \frac{l}{14} = 252; l - 14 = 252 \quad [2]$$

b Solve for  $x$  each of the following equations:

(1)  $\frac{x}{3} - 4 = 12$  [2]

(2)  $3x + 6 = 18$  [2]

c Add  $4a + 2b - 3a - 2b + c$  [2]

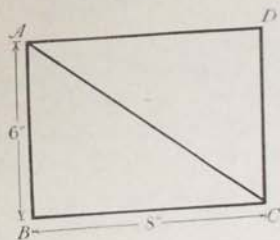
33 John's father and mother plan to take him to New York this summer and wish to decide whether to go by train or by automobile. The round-trip railroad fare for one adult is \$14.66. John, being under 12 years of age, can travel for half fare. By automobile, the distance is 330 miles each way, and John's father estimates that it costs 5¢ a mile to drive their car.

- a Find the cost of railroad fare for the family to New York and back. [5]  
 b Find the cost of making the trip by automobile to New York and back. [5]

34 Answer both a and b:

a Using the dimensions on the accompanying diagram, determine the following:

- (1) The perimeter of rectangle  $ABCD$  [1]  
 (2) The area of triangle  $ABC$  [2]  
 (3) The length of diagonal  $AC$  [2]



b The accompanying diagram represents a metal can.

- (1) What is the name of this common geometric solid? [1]  
 (2) Find the area of the base. [2]  
 (3) Find the volume of the can. [2]

