The University of the State of New York

305TH HIGH SCHOOL EXAMINATION

MATHEMATICS (Preliminary)

Wednesday, January 26, 1949 — 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.

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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 Find the sum of 8.49; 12; 42.35 1

2 Find the difference between \$10 and \$7.39 2

3 Fifty minutes is what fractional part of an hour? 3

4 John's father bought two turkeys. One weighed $12\frac{1}{2}$ pounds and the other $13\frac{1}{4}$ pounds. How much did they weigh together? 4

5 How much is 32740 divided by 36? 5

6 If a dress factory uses $3\frac{1}{8}$ yards of cloth to make a dress, how many yards will it take to make 12 dresses? 6

7 What is the ratio of a nickel to a quarter? 7

8 Is 5700 feet above sea level more than or less than a mile? 8

9 Find the product of 657 and $66\frac{2}{3}$. 9

10 If a sales tax is 2%, what would the tax be on a purchase of \$8.50? 10

11 If beans are being sold at the rate of 3 cans for 55 cents, how many cans can be purchased for \$3.30? 11

12 If n represents a number, express, in terms of n, 5 less than 4 times the number. 12

13 If a boy bought a baseball glove for \$5.50 and sold it for \$4.40, what was the per cent of loss on the original cost? 13

14 How many hours and minutes will it take a boy to ride his bicycle a distance of 10 miles at the rate of 6 miles per hour? 14

15 A plane took off from an air base at 9:35 a. m. and returned at 1.33 p. m. Find the flying time in hours and minutes. 15

16 If x equals 7, what is the value of $2x - 5$? 16

17 Mr Jones feeds his horse 1 peck of oats each day. If he has 5 bushels of oats, how many days can he feed his horse with this supply? 17

18 If a plumber cuts two pieces of pipe, one $6\frac{3}{4}$ feet and the other $3\frac{1}{2}$ feet long, from a 12-foot length of pipe, how many feet of pipe are left? 18

19 How much will the tax be on a property assessed at \$4800 if the tax rate is \$16.50 per thousand? 19

20 Write $27\frac{1}{2}\%$ as a decimal. 20

21 Write the algebraic expression for the following: $\frac{2}{3}$ of a number decreased by 4. 21

22 Find the circumference of a circle whose radius is 14 feet. (Use $\pi = \frac{22}{7}$) 22

23 Find the perimeter of an equilateral triangle each of whose sides is 6 inches. 23

24 Two angles of a triangle are 65 degrees and 25 degrees. How many degrees does the third angle contain? 24

25 A man drove 180 miles in 5 hours. What was his average rate of speed per hour? 25

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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 mathematics.

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

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's father demonstrates and sells vacuum cleaners. He receives 85 cents for each demonstration and a commission of 50% on all sales. During the year 1948 he made 676 demonstrations and sold 104 vacuum cleaners at $69.50 each.

a How much were his earnings from demonstrations? [2]

b How much did he earn during the year, including all demonstrations and commissions? [6]

c What were his average weekly earnings for the year? [2]

27 A school wishes to buy baseball equipment that is listed at $600. A. M. Smith Co. quotes discounts of $33\frac{1}{3}\%$ and 2% for cash. C. A. Jones Co. quotes a single discount of 40%.

a What net price does A. M. Smith Co. offer? [5]

b What net price does C. A. Jones Co. offer? [3]

c Which is the better offer and how much better? [2]

28 Charles can buy a bicycle for $40 cash or for $10 down and $3 per month for 12 months. He decides to buy the bicycle on the instalment plan.

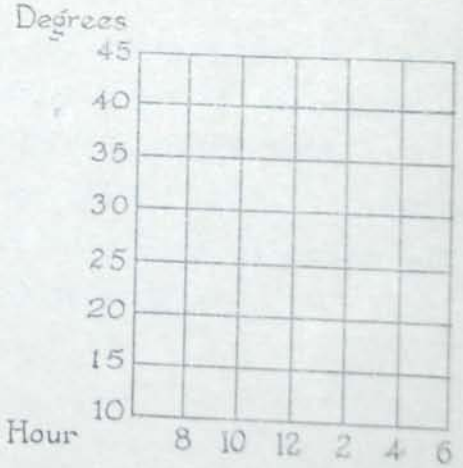
a What will be the total cost of the bicycle on the instalment plan? [5]

b What will be the unpaid balance after the second instalment is paid? [3]

c What additional charge is made for making the purchase on the instalment plan? [2]

29 On the form provided, make a graph to show a comparison of the changes in temperature from 8 a. m. to 6 p. m. as given below: [10]

8 a. m.	20 degrees
10 a. m.	30 degrees
12 noon	45 degrees
2 p. m.	40 degrees
4 p. m.	30 degrees
6 p. m.	10 degrees



30 In *each* of the following problems one necessary fact is missing; therefore, the problem can not be solved. Add enough information to make a complete problem [3]. Find the answer to the problem you have made [2].

a In a certain eighth grade there are 16 boys. What is the ratio of boys to girls? [5]

b Sam earned 10% more this week than he earned last week. How much did he earn this week? [5]

31 In order to receive a preliminary certificate, it is necessary to obtain an average of 75% in the Regents preliminary examinations. Using the following information, answer the questions below:

Mary's Marks		*Joe's Marks*	
Arithmetic	60	Arithmetic	85
English — Part I	80	English — Part I	70
English — Part II	90	English — Part II	60
Social Studies	70	Social Studies	70
Science		Science	95

a Will Joe receive a preliminary certificate? [4]

b Mary has not yet received her mark in Science. What will be the lowest mark Mary can receive in Science in order to earn her preliminary certificate? [6]

32 Solve the following algebraically:

a At a game 220 people were present, including spectators and players. If there were 10 times as many spectators as players, find the number of players. [3]

b Which one of the following expressions, $\frac{1}{5}x$, $5x$ or $\frac{5}{x}$, is equal to $\frac{x}{5}$? [2]

c Using the formula $V = lwh$, find V when l equals $6'$, w equals $4'$ and h equals $3'$. [2]

d John and Frank worked a total of 36 hours. If Frank worked 10 hours longer than John, how many hours did *each* work? [3]

33 At a certain time of day a flag pole 60 feet high casts a shadow 80 feet long. At exactly the same time of day, a near-by tree casts a shadow 120 feet long. Find the height of the tree. [10]