The University of the State of New York

308th High School Examination

MATHEMATICS (Preliminary)

Wednesday, January 25, 1950 — 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.

[1]   [OVER]

MATHEMATICS (Preliminary)

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 6498; 825; 57; 907; 6870; 8781; 968   1................

2 Multiply $39.50 by 10   2................

3 Divide 6.9525 by 7.5   3................

4 Subtract 387.5 from 400   4................

5 Add $82\frac{2}{3}$; $15\frac{3}{4}$; $11\frac{1}{6}$ 5................

6 Find the product of $16\frac{2}{3}$ and 18   6................

7 If lemons sell at 3 for 19 cents, what is the cost per dozen?   7................

8 In six tests Walter had scores of 80, 90, 100, 70, 90 and 80. What was his average score?   8................

9 The area of a square flower bed is 64 square feet. What is the length of one side?   9................

10 If the temperature dropped from 2 degrees above zero to 10 degrees below zero, how many degrees did it drop?   10................

11 If a boy makes 16 free throws out of 20 tries, what per cent does he make?   11................

12 A certain school has a one-quarter mile track on its playground. How many times around the track would a boy have to run to complete a mile?   12................

13 At 25 cents each, how many school lunches can be bought for $6?   13................

14 On Thursday, a family had spent $48, which was 80% of its weekly budget. How much was the budget?   14................

15 A girl was born on June 2, 1937. How old will she be on her next birthday?   15................

16 Billy is making a knot exhibit. If he allows 20 inches of rope for each knot, how many feet of rope will he need to make 18 knots?   16................

17 How far can an airplane travel in 15 minutes if it travels at an average speed of 240 miles an hour?   17................

18 A house was insured for $4000 at a premium of 60 cents per $100. What was the premium?   18................

19 Mt. Marcy, the highest peak in New York State, is 5344 feet above sea level. How much higher than a mile above sea level is Mt. Marcy?   19................

20 A piano marked to sell for $600 is sold for $400. What is the rate of discount based on the marked price?   20................

21 What is the ratio of a month to a year?   21................

22 Represent the cost of 40 tons of coal at d dollars per ton.   22................

23 Find the value of x in the equation: $5x - 3 = 12$ 23................

24 The formula for the area of a sphere is $A = 4\pi r^2$. Find the value of A if $\pi = \frac{22}{7}$ and $r = 7$.   24................

25 Two angles of a triangle measure 75° and 45°. How many degrees are there in the third angle?   25................

[2]

MATHEMATICS (Preliminary)

Wednesday, January 25, 1950

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.*

1 According to the 1940 census there were five cities in the United States with populations of one million or more. Using the following figures, answer the questions below.

Detroit 1,623,452   New York 7,454,995   Chicago 3,396,808
Philadelphia 1,931,334   Los Angeles 1,504,277

a List the cities in order of population, from largest to smallest. [4]

b What is the difference in population between the largest and the smallest of the cities? [3]

c The population of 713,346 was the smallest for any state in the United States according to the 1940 census. About how many times greater was the population of New York City than that of the smallest state in 1940? [3]

2 A boy who worked in Friend's Grocery made daily deposits in the bank for the store. On January 23, 1950, he took the following to the bank for deposit:

$200.00 in bills (currency) $10.00 in half dollars
15.00 in quarters   6.00 in nickels
8.00 in dimes   4.00 in pennies

and a check from Anytown Bank for $24.50.
Using the information above fill in the form at the right. [10]

Deposited in
OURTOWN FIRST BANK
Ourtown, N. Y.
.... 19........
for account of

List each check separately.

Bills		
Coin		
Checks:		
Total		

3 Jane, who was visiting a cousin, sent her mother a 13-word telegram. The charge was 51 cents for the first ten words, and 3 cents for each additional word. There was also a 25% tax on the total cost of the telegram.

a How much charge (without tax) was there for the additional words? [2]

b What was the total cost of the telegram, including tax? [8]

[3]   [OVER]

4 Last year Jimmy Potter raised five puppies. After a time he sold them all for $10 each. During the time he kept them he had the following expenses: food, $19.75; veterinarian's fees, $9.00; other expenses, $11.25.

    a What was the total expense for the care of the puppies? [2]

    b What was the total income from the sale of the puppies? [2]

    c How much profit did he make? [2]

    d What per cent of the selling price was profit? [4]

5 *A* Change *each* of the following rules into formulas:

    (*a*) When you multiply the Area of the base (A) of a cylinder by its height (h), you get its Volume (V). [3]

    (*b*) When you divide the product of the base (b) and height (h) of a triangle by 2, you get its Area (A). [3]

  B Change the following formula for the area of a circle into a rule: $A = \pi r^2$ [4]

6 Mrs. Jones can buy a new refrigerator listed to sell for $300 with a 10% discount for cash or $30 down payment and $16.50 a month for 18 months.

    a How much will the refrigerator cost Mrs. Jones if she pays cash? [3]

    b How much will Mrs. Jones pay if she buys on the installment plan? [5]

    c How much can she save by paying cash? [2]

7 *a* How much did it cost Mr. Williams to run his car for a year if his expenses were: license fees, $14.50; automobile insurance, $48; depreciation, $230; repairs and supplies, $29.90; garage rent at $7 per month; gasoline. 620 gallons at 23 cents per gallon; oil, 36 quarts at 25 cents per quart? [6]

  b If Mr. Williams drove his car 9300 miles during the year, what was the cost per mile to drive the car? [4]

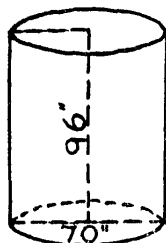8 *a* How great is the change in temperature from —8° to 20°? [2]

  b If $x = 3$ and $y = 4$, what is the value of $x^2 + 2y - x$? [2]

  c If $2x = 6$, what is the value of $3x$? [2]

  d Solve for x in the equation: $3x = x + 6$ [2]

  e Solve for y in the equation: $\dfrac{y}{4} = 3$ [2]

9

The cylindrical tank illustrated at the left has a diameter of 70 inches and a height of 96 inches.

    a Find the radius of the tank. [2]

    b Using the formula $V = r^2 \pi h$, find the volume of the tank in cubic inches. ($\pi = \frac{22}{7}$) [4]

    c How many gallons of water will the tank hold if one gallon of water occupies 231 cubic inches? [4]

[4]

FOR TEACHERS ONLY

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INSTRUCTIONS FOR RATING

MATHEMATICS (Preliminary)

Wednesday, January 25, 1950—9.15 a. m. to 12.15 p. m., only

Use only *red* ink or pencil in rating Regents papers. Do not attempt to *correct* the pupil's work by making insertions or changes of any kind.

Part I

Allow 2 credits for each correct answer; no partial credit allowed. Each answer must be reduced to its simplest form.

1	24906	14	$60
2	$395.00	15	13
3	.927	16	30 or 30 ft
4	12.5	17	60 miles
5	$109\frac{7}{12}$	18	$24
6	300	19	64 ft
7	76¢ or $.76	20	$33\frac{1}{3}\%$ or $33\frac{1}{3}$
8	85	21	1 to 12 or $\frac{1}{12}$ or 1 : 12
9	8	22	40 d
10	12 or 12°	23	3
11	80 or 80%	24	616
12	4	25	60 or 60°
13	24		

Part II

Do not allow credit unless all necessary operations are given. Each answer must be reduced to its simplest form.

1 Allow 10 credits as indicated:

 a Only full credit (4) will be allowed.

 New York
 Chicago
 Philadelphia
 Detroit
 Los Angeles

 b Allow 3 credits for correct answer:
 5,950,718

 c Allow 3 credits for correct answer:
 10 or 10 times

2 Allow 10 credits, 2 credits for correctly completed heading, 2 credits for each correct entry, and 2 credits for correct total.

3 Allow 10 credits as indicated:

   a 9¢ or $.09 [2 credits]

   b 75¢ or $.75 [8 credits]

4 Allow 10 credits as indicated:

   a $40.00 [2 credits]

   b $50.00 [2 credits]

   c $10.00 [2 credits]

   d 20 or 20% [4 credits]

5 Allow 10 credits as indicated:

  A Allow 3 credits for each part.

    (*a*) $V = Ah$ or $V = A \times h$ or $V = A \cdot h$

    (*b*) $A = \dfrac{bh}{2}$ or $A = \dfrac{b \times h}{2}$ or $A = \dfrac{b \cdot h}{2}$

  B Allow 4 credits for correct statement in student's own words.

Deposited in		
OURTOWN FIRST BANK		
Ourtown, N. Y.		
January 23,		*1950*
for account of		
Friend's Grocery		
Ourtown, N. Y.		
List each check separately.		
Bills	200	
Coin	43	
Checks: *Anytown Bank*	24	50
Total	267	50

6 Allow 10 credits as indicated:

   a $270.00 [3 credits]

   b $327.00 [5 credits]

   c $57.00 [2 credits]

7 Allow 10 credits as indicated:

   a $558.00 [6 credits]

   b 6¢ per mile [4 credits]

8 Allow 10 credits, 2 credits for each part:

   a 28°

   b 14

   c 9

   d 3

   e 12

9 Allow 10 credits as indicated:

   a 35 or 35 inches [2 credits]

   b 369,600 cubic inches [4 credits]

   c 1600 or 1600 gallons [4 credits]