The University of the State of New York

309TH HIGH SCHOOL EXAMINATION

# MATHEMATICS (Preliminary)

**Wednesday,** June 21, 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.

# 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 4.98; 62.5; 3.865; 587 1.....

2 Find the difference between 34165 and 29602 2.....

3 Multiply 37.5 by .083 3.....

4 Add $2\frac{1}{8}$; $5\frac{3}{4}$; $8\frac{1}{2}$ 4.....

5 At the rate of 48 cents per dozen, how much will 3 eggs cost? 5.....

6 Add 13812; 21305; 12429; 16496; 19763 6.....

7 In a certain school there are 108 boys. How many intramural baseball teams (nine boys on a team) can they form, using all the boys? 7.....

8 The total weight of the eleven players on a high school football team is 1716 pounds. What is their average weight? 8.....

9 Mr. White's farm is mortgaged for $2200. At a rate of 5%, what is the annual interest charge for the mortgage? 9.....

10 How many times greater is 90 than 15? 10.....

11 A boy spent one third of his money for a tennis racquet and one fifth of his money for balls. What fractional part of his money did he spend? 11.....

12 Joe used 7 ft. 4 in. of leather lacing to bind his scrapbook and Jim used 9 ft. 2 in. for his. How much more did Jim use than Joe? 12.....

13 Which is the greatest: $\frac{3}{4}$; .80; 66%? 13.....

14 In a group of 21 girls were 14 Girl Scouts. What per cent of the 21 were Scouts? 14.....

15 What is the value of $x$ in the equation $5x + 14 = 24$? 15.....

16 If a rectangle 12 feet long has an area of 108 square feet, what is the width of the rectangle? 16.....

17 At 10 cents a square foot, what is the cost of cleaning a rug that is 9 feet long and 6 feet wide? 17.....

18 If $3x = 18$, what does $2x$ equal? 18.....

19 30 inches of leather will make one belt. How many feet of leather would be needed to make 12 belts? 19.....

20 If $x - 2 = 5$, what is the value of $x$? 20.....

21 The ratio of the width of a banner to its length is 11 to 19. If the banner is 44 inches wide, what is its length? 21.....

22 The scale of miles on a certain map is 1 in. = 50 miles. How long a line will have to be drawn on the map to show a distance of 1000 miles? 22.....

23 Write the formula for the number of minutes ($m$) in $h$ hours. 23.....

24 How many degrees less than a right angle is an angle of 74°? 24.....

25 A salesman sold $1850 worth of merchandise on a commission of 35%. How much was his commission? 25.....

# MATHEMATICS (Preliminary)

Wednesday, June 21, 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 A boy who works in a grocery store finds that he often has to figure prices on odd units of weight. Following are some typical sales. In each case figure the cost to the nearest penny, making sure that any fractional part of one cent is counted as an extra cent.

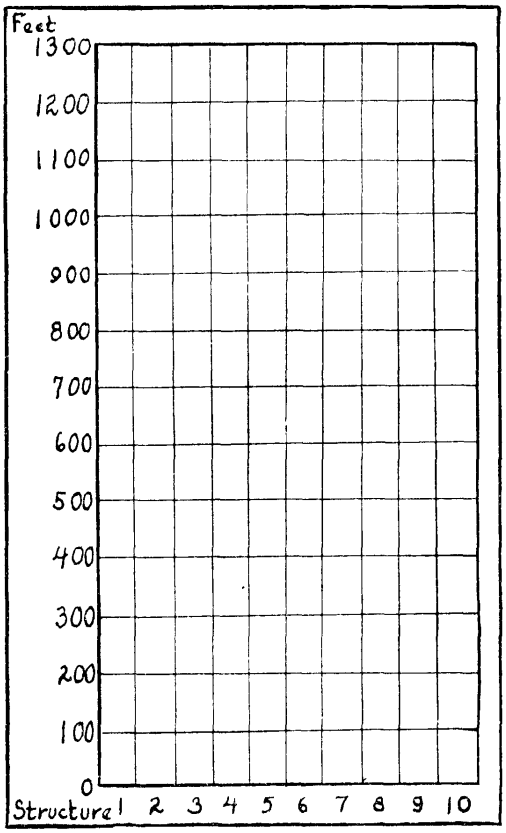
*a* 5 lb. 3 oz. of cabbage @ 4¢ per pound [2]
*b* 8 lemons @ 2 for 11¢ [2]
*c* 6 lb. of sweet potatoes @ 2 lb. for 17¢ [2]
*d* 8 oz. of cheese @ 59¢ per pound [2]
*e* 15 lb. of potatoes @ $3 per hundred lb. [2]

2 Two boys went into the window cleaning business on a partnership basis. Joe invested 40% of the money to buy equipment and Jim invested 60%. They agreed to divide their earnings in proportion to their investments. Their investments totaled $30. During the year they took in a total of $420.

*a* How much did each boy invest? [4]
*b* How much profit did each boy receive? [4]
*c* How many times greater were Joe's earnings than his original investment? [2]

3 On the accompanying form make a bar graph to show a comparison of the heights of some of the notable tall buildings in New York City. [10]

| *Structure No.* | *Name* | *Height* |
|---|---|---|
| 1 | Empire State | 1250 ft. |
| 2 | Chrysler | 1046 ft. |
| 3 | 60 Wall Tower | 950 ft. |
| 4 | Bank of Manhattan | 927 ft. |
| 5 | RCA (Rockefeller Center) | 850 ft. |
| 6 | Woolworth | 792 ft. |
| 7 | Farmers Trust | 741 ft. |
| 8 | Metropolitan Life | 700 ft. |
| 9 | Chanin | 680 ft. |
| 10 | Lincoln | 673 ft. |



4 Mr. Jones with his wife and three children took a vacation trip. The expenses were as follows: gasoline, 100 gallons at 24 cents a gallon; oil, 6 quarts at 40 cents a quart; car repairs, $19; hotel bill, $10 for the family per night for 5 nights; food, $12 for the family per day for 6 days; entertainment, $35.40 for the entire trip; miscellaneous, $12.50.

*a* What was the total expense for the trip? [8]

*b* What was the average cost of the trip for each member of the family? [2]

5 In each of the following problems you will find a fact missing. In each case add a fact that will make the problem complete and then solve the problem.

[*Example:* How far can an airplane travel if it travels at an average speed of 240 miles per hour?

$$\begin{array}{r} 240 \text{ miles per hour} \\ \times \quad 2 \text{ hours} \\ \hline 480 \text{ miles } \textit{Ans.} \end{array}$$

]

*a* If you buy five pounds of butter, how much change should you receive from a five-dollar bill? [2]

*b* At $20 per ton, what is the cost of a load of coal? [2]

*c* What is the interest on $200 for one year? [2]

*d* How many square feet are there in a rectangle that is 20 feet long? [2]

*e* A basketball team played 16 games. What per cent of the games played did this team win? [2]

6 Miss Helen Jones is employed as a saleslady in a department store. She is paid $30 a week salary and a commission of 4% on all sales above $200. During a certain week Miss Jones sold merchandise totalling $730.

*a* How much commission did Miss Jones earn during the week? [8]

*b* What were Miss Jones' total earnings for the week? [2]

7 Mr. Brown purchased a television set listed for $199.50. He made a down payment of $19.50 and made a contract to pay the balance in 18 installments of $12 each.

*a* How much did the television set really cost when all payments were complete? [8]

*b* How much could Mr. Brown have saved by paying cash? [2]

8 *a* Solve for $n$ in the following equations:

(1) $\frac{n}{5} = 20$ [2]

(2) $n - 5 = 20$ [2]

*b* Add: $2x + y + 3y - x - y$ [2]

*c* Choose the correct equation for each of the following:

(1) A caddy had $n$ golf balls. After finding 14 more, he had 37. How many balls did he have before he added the ones found? [2]

$n - 14 = 37$ $\qquad \frac{n}{14} = 37$ $\qquad n + 14 = 37$

(2) A boy spends $2 or $\frac{1}{4}$ of his money ($m$). How much money did he have in the beginning? [2]

$\frac{m}{4} = \$2$ $\qquad m + \frac{1}{4} = 14$ $\qquad 4m = 14$



[OVER]

9

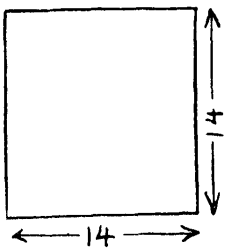



Fig. A

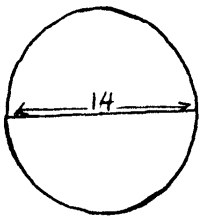



Fig B

Using $\pi = \frac{22}{7}$:

*a* Find the area of each of the above figures. [5]

*b* Find the perimeter of each of the above figures. [5]

[5]

# FOR TEACHERS ONLY

# M

## INSTRUCTIONS FOR RATING
## MATHEMATICS (Preliminary)

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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) 658.345
(2) 4563
(3) 3.1125
(4) $16\frac{3}{8}$
(5) 12¢ *or* \$.12
(6) 83805
(7) 12
(8) 156 lb.
(9) \$110
(10) 6
(11) $\frac{8}{15}$
(12) 1 ft. 10 in. *or* 22 in.
(13) .80
(14) $66\frac{2}{3}\%$ *or* $66\frac{2}{3}$
(15) $x = 2$ *or* 2
(16) 9 ft.
(17) \$5.40
(18) $2x = 12$ *or* 12
(19) 30 ft. *or* 30
(20) $x = 7$ *or* 7
(21) 76 in. *or* 6 ft. 4 in.
(22) 20 in. *or* 1 ft. 8 in.
(23) $m = 60h$
(24) 16° *or* 16
(25) \$647.50

### 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, 2 credits for each part:
*a* 21¢ *or* \$.21
*b* 44¢ *or* \$.44
*c* 51¢ *or* \$.51
*d* 30¢ *or* \$.30
*e* 45¢ *or* \$.45

2 Allow 10 credits as indicated:
*a* Joe — \$12; Jim — \$18 [4 credits]
*b* Joe — \$168; Jim — \$252 [4 credits]
*c* 14 [2 credits]

3 Allow 10 credits, 1 credit for each of the 10 building heights correctly shown on the graph.

[OVER]

(2)

4 Allow 10 credits as indicated:
*a* $215.30 [8 credits]
*b* $43.06 [2 credits]

5 Allow 10 credits, 1 credit for each correct fact added, 1 credit for each correct solution, to be scored on basis of teacher's judgment of student's answer.

6 Allow 10 credits as indicated:
*a* $21.20 [6 credits]
*b* $51.20 [4 credits]

7 Allow 10 credits as indicated:
*a* $235.50 [8 credits]
*b* $36 [2 credits]

8 Allow 10 credits as indicated:
*a* (1) $n = 100$ [2 credits]
(2) $n = 25$ [2 credits]
*b* $x + 3y$ [2 credits]
*c* (1) $n + 14 = 37$ [2 credits]
(2) $\frac{m}{4} = \$2$ [2 credits]

9 Allow 10 credits as indicated:
*a* Fig. A — 196 [$2\frac{1}{2}$ credits]; Fig. B — 154 [$2\frac{1}{2}$ credits]
*b* Fig. A — 56 [$2\frac{1}{2}$ credits]; Fig. B — 22 [$2\frac{1}{2}$ credits]