

The University of the State of New York

300TH HIGH SCHOOL EXAMINATION

MATHEMATICS (Preliminary)

Wednesday, June 18, 1947 — 9.15 a. m. to 12.15 p. m., only

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.

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 38, 427, 365, 9861, 735 1.....
- 2 Subtract \$249.50 from \$320 2.....
- 3 Find the sum of $7\frac{1}{2}$, $4\frac{1}{2}$, $2\frac{1}{2}$, 6 3.....
- 4 Divide 77.095 by 8.5 4.....
- 5 Multiply 650 by $87\frac{1}{2}$ 5.....
- 6 Write .375 as a per cent. 6.....
- 7 How many 4-ounce bags can be filled from 12 pounds of peanuts? 7.....
- 8 Peter saved 30 cents out of an allowance of one dollar. What per cent of his money did he save? 8.....
- 9 An agent sold 200 boxes of apples at \$4 a box and charged a commission of 5%. What was his commission? 9.....
- 10 If a car travels 320 miles on 20 gallons of gasoline, how many miles does it average on one gallon? 10.....
- 11 A canoe marked \$150 was sold for \$120. What was the rate of discount? 11.....
- 12 A baseball team lost 2 games, which was 20% of the total number of games played. How many games did the team play? 12.....
- 13 The area of Rhode Island is 1214 square miles. The area of Texas is 267,339 square miles. Texas is how many times as large as Rhode Island? [Find answer correct to the nearest whole number.] 13.....
- 14 Henry produced 3 bu. 1 pk of potatoes in his garden plot. Paul produced 1 bu. 3 pk of potatoes in his garden plot. How many more potatoes did Henry produce than Paul? 14.....
- 15 In an eighth grade class there are 8 boys and 24 girls. What is the ratio of boys to girls? 15.....
- 16 What is the premium on a \$5000 insurance policy at the rate of \$27.60 per \$1000? 16.....
- 17 John worked from 12:30 p. m. to 5 p. m. How much did he earn if he received 50 cents an hour? 17.....
- 18 Find the interest on \$100 for 3 months at the rate of 6% per year. 18.....
- 19 Express in terms of x the number of yards in x inches. 19.....
- 20 If you double a certain number and subtract 4 the result is 16. What is the number? 20.....
- 21 If the length of one side of a rectangle is 8 inches and the width is $2\frac{1}{2}$ inches, how many square inches are there in the area of the rectangle? 21.....
- 22 Find in inches the radius of a wheel whose circumference is 44 inches. [$\pi = 3\frac{1}{7}$] 22.....
- 23 If $b = 4$, $h = 2$ and $A = 2b + 2h$, what is the value of A ? 23.....
- 24 What is the perimeter of a square having an area of 49 square inches? 24.....
- 25 A concrete sidewalk 3 feet wide, 18 feet long and 4 inches thick contains how many cubic feet of concrete? 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 recently drove his car from his home to Albany, a distance of 195 miles. He left home at 9.30 a. m. and after driving 90 miles, he stopped for lunch at 12.30 p. m. the same day. After lunch he resumed his trip at 1.10 p. m. If he continued his trip at the same average speed per hour as in the morning, at what time did he arrive in Albany? [10]

27 In each of the following problems one necessary fact has been left out; therefore, the problem can not be solved. Add just enough information to make a problem [3]. Find the answer to the problem as you have made it [2].

a Jane paid \$3.50 for eggs. What was the cost per dozen? [5]

b If Charles saves \$1 per week, how many weeks will it take him to save enough money to buy a bicycle? [5]

28 Using the following form, make out a check to Brown and Company for \$29.50 to pay for a radio. Fill in the stub with the correct information and enter the new balance. [Check [5], information [2], correct balance [3]]

Date	No. 21	No.	Anytown, N. Y., 19.....
Pay to		<h3 style="margin: 0;">THE PEOPLE'S BANK</h3>	
For			
Bal. forward	126		
Deposited	20	00	\$
Total		 Dollars
This check		
New balance		

29 Mr Thomas cut 480 crates of cauliflower from his field. He sold the cauliflower at an average of \$1.25 per crate. The commission he had to pay for selling the cauliflower was 10¢ a crate. The cost of the crates was 38¢ each. Other expenses of raising the cauliflower amounted to \$96.

a What was the selling price of the cauliflower? [2]

b What was the total amount of commission? [1]

c What was the total cost of the crates? [1]

d What was Mr Thomas' total expense? [2]

e What was his net gain? [2]

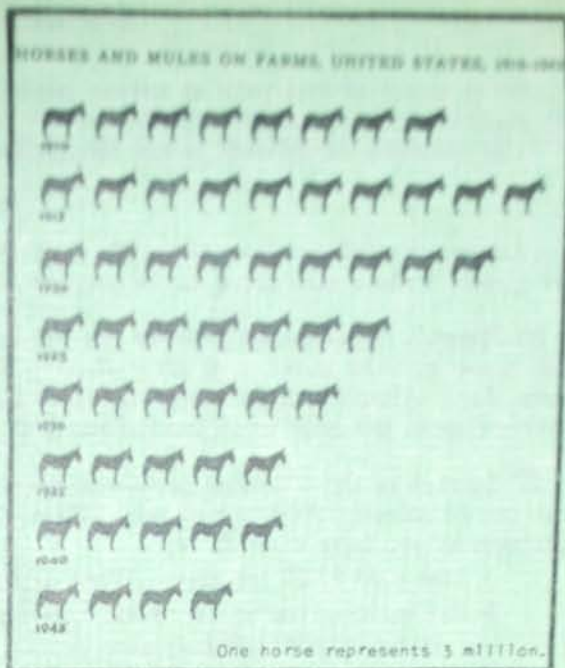
f How much was the net gain per crate? [2]

[3]

[OVER]

30 From the information given in the graph answer the following:

- In what year were there the greatest number of horses and mules on farms? [1]
- What was the total number of horses and mules in the United States in 1925? [1]
- How many times as many horses and mules were there in 1915 as there were in 1940? [2]
- What was the ratio of horses and mules in 1920 to horses and mules in 1930? [2]
- What was the per cent of increase in the number of horses and mules from 1910 to 1915? [2]
- What was the per cent of decrease in the number of horses and mules from 1915 to 1945? [2]



31 At the beginning of a 1565 mile trip we had 17 gallons of gasoline in the tank of our car. During the trip we bought 14 gallons, 12 gallons, 15 gallons, 14 gallons, 11 gallons, 13 gallons and 10 gallons. At the end of the trip there were 5 gallons in the tank.

- How many gallons of gasoline were used on the trip? [5]
 - How many miles, to the nearest tenth, did the car average per gallon of gasoline? [5]
- 32 Solve each of the following: [Solve *a* and *b* by use of algebraic equations.]
- Frank is $\frac{1}{3}$ his father's age. If Frank is 10 years old, how old is his father? [2]
 - Yesterday Peter counted his marbles and found that he had 110, which was 5 more than 3 times as many as he had a year ago. Find the number of marbles he had a year ago. [5]
 - If *a* equals 4, *b* equals 3 and *c* equals 2, what is the value of $2a + 3b - 4c$? [3]
- 33 Using a scale of 1 inch = 60 feet, draw a figure which represents a right triangle with sides of 180 feet, 240 feet and 300 feet. Use the margin line of your paper and one of the horizontal lines for the two sides that make a right angle. [10]