The University of the State of New York

311TH HIGH SCHOOL EXAMINATION

MATHEMATICS (Preliminary)

Wednesday, January 24, 1951 — 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.

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 $43.50; $9.95; $7.98; $67.33

1................

2 Subtract .0879 from 3.0008

2................

3 Divide 474.32 by 56

3................

4 Add $3\frac{1}{4}$; $2\frac{3}{5}$; $5\frac{1}{2}$; $3\frac{3}{10}$

4................

5 How many times greater than 6 kilometers is 36 kilometers?

5................

6. Peter had 5 yards of lacing to cut into 20-in. pieces. How many pieces measuring exactly 20 in. each can he cut from the lacing?

6................

7 At the rate of 50 cents per hundred pounds, how much did a license cost for an automobile weighing 3100 pounds?

7................

8 Express $12\frac{1}{2}\%$ as a fraction.

8................

9 If 9 eggs out of 12 hatched, what per cent of the eggs hatched?

9................

10 Which of the following is greater: 35 billion or 35 million?

10................

11 If a discount of 20% is given on an article marked $17.50, what is the selling price?

11................

12 One-half dozen eggs added to four eggs equals how many eggs?

12................

13 If 3 packages of flavor make 1 quart of drink, how many packages will be needed to make one gallon?

13................

14 At 80 cents an hour how much will a boy earn in 5 hours and 15 minutes?

14................

15 How much profit will be made on one gross of pencils if a profit of 1 cent is made on each pencil?

15................

16 From 3 feet 6 inches subtract 1 foot 10 inches.

16................

17 Each edge of a cube is 2 centimeters long. What is the volume of the cube?

17................

18 How much tax must be paid on property assessed for $3800, if the tax rate is $15.65 per thousand?

18................

19 If $a = 4$ and $b = 6$ what does $4a - b$ equal?

19................

20 What per cent of 16 is 8?

20................

21 Find the area of a triangle having a base of 10 feet and an altitude of 8 feet.

21................

22 If coal costs x dollars per ton, how much will $\frac{1}{4}$ ton cost?

22................

23 Find the circumference of a circle whose radius is $10\frac{1}{2}$ inches.

23................

24 How much change should Jane get from a dollar when she buys 6 pounds of potatoes at 2 pounds for 9 cents?

24................

25 Sam picked 36 baskets of apples, which he sold at 85 cents a basket. How much did he receive for the apples?

25................

[2]

MATHEMATICS (Preliminary)

Wednesday, January 24, 1951

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 The following graph represents the national debt of the United States from the year 1941 through the year 1950.
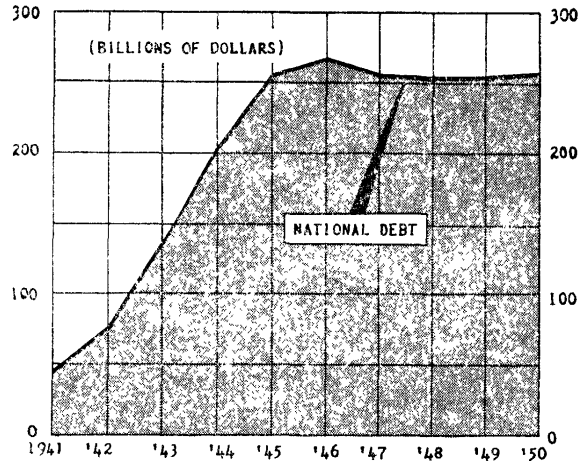
From this graph determine the answers to the following questions:

a How many years are represented by the graph? [1]

b In what year was our national debt the smallest? [1]

c What was the national debt in 1944? [1]

d What was the approximate increase in the national debt from 1943 to 1944? [2]

e In what year was our national debt the largest? [1]

f In what year did the national debt begin to decrease? [1]

g How much greater was the national debt in 1950 than it was in 1941? [2]

h In what two consecutive years was the national debt the same? [1]

27 Billy has on his paper route 80 customers who take both weekday and Sunday editions. He has 20 other customers who take only the Sunday edition. Billy collects $2.00 per month from each of his customers who take papers every day and 60 cents from each of his customers who take only Sunday papers.

   a How much does Billy collect from his customers each month? [6]

   b How much does Billy make in a month if his commission is 30% of the amount he collects? [4]

28 A group of Sea Scouts taking a trip of 5250 miles on a freighter figured that in the first seven days the ship made 1750 miles.

   a What was the average number of miles sailed in a day? [2]

   b At the same rate of miles per day, how many *additional* days would the trip require? [4]

   c A nautical mile equals $1\frac{1}{8}$ land miles. How many nautical miles did the ship travel during the first seven days? [Express answer in *nearest nautical mile.*] [4]

[3] [OVER]

29 A local dealer purchased a shipment of 300 boys' hats at $21 per dozen. He sold 260 of the hats at the regular price of $2.45 each and sold out the balance of the lot at a price of $1.95 each.

    a How much did the dealer pay for the shipment of hats? [3]

    b How much gross profit did the dealer make in selling all the hats? [4]

    c Which is closest to the per cent of gross profit: 30%, 50%, 75%, $12\frac{1}{2}\%$? [3]

30 Peter bought for a party: $2\frac{1}{2}$ pounds of wieners at 60 cents per pound; 1 jar of mustard at 14 cents; 2 dozen rolls at 23 cents per dozen; 2 boxes of marshmallows at 33 cents per box.

    a Find the total cost of the items. [4]

    b Peter offered the clerk three one-dollar bills in payment. The clerk said, " If you have a penny, I can give you change more easily." Peter quickly added a penny to the three one-dollar bills. Explain how the extra penny made it possible for the clerk to give Peter the correct change more easily. [5]

    c How much change did Peter receive? [1]

31 Dorothy wanted to buy a ready-made dress that cost $21, but her aunt said that she would help her make one at home. Dorothy bought the material and gave her aunt $5 for her help. The cost of the material was as follows: pattern, 25 cents; $3\frac{1}{2}$ yards of cloth at $1.29 per yard; $2\frac{1}{4}$ yards of binding at 8 cents per yard; thread, 35 cents; 9 buttons at 3 for 7 cents.

    a How much did the homemade dress cost Dorothy? [8]

    b How much did she save by making the dress? [2]

32 An eighth grade boy bought from his father 20 hundred-pound sacks of potatoes at $1.50 per hundred-pound sack. He sold the potatoes in ten-pound bags at 55 cents per bag.

    a How much did he pay his father for the potatoes? [2]

    b How many ten-pound bags was he able to get from the 20 hundred-pound sacks? [2]

    c What were his total receipts for the potatoes? [3]

    d How much more than the total cost was the total selling price of the potatoes? [3]

33 Answer *each* part of the following:

    a Using *n* for a number, write an equation to solve *each* of the following:

        (1) Jimmy knows he lost 12 marbles because he has 308 left. How many did he have before his loss? [2]

        (2) In order for Henry to have a collection of 500 buttons he must get 30 more. How many does he now have? [2]

        (3) One fourth of Mary's weekly practicing time is 3 hours. How many hours a week does she have to practice? [2]

        (4) Jane's weight is 132 pounds, which is twice as much as her sister's weight. How much is her sister's weight? [2]

    b Solve the following proportion: $\dfrac{x}{4} = \dfrac{10}{5}$ [2]

34 The drawing at the right shows how a sidewalk sign in front of a tearoom was hung on a 5-foot pole held by a chain. The chain was anchored in the wall twelve feet above the pole. How long was the chain? [10]

[4]
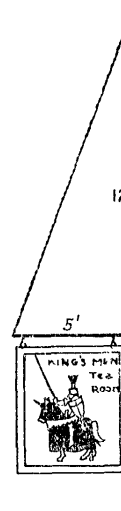
FOR TEACHERS ONLY

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INSTRUCTIONS FOR RATING

MATHEMATICS (Preliminary)

Wednesday, January 24, 1951 — 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) $128.76
(2) 2.9129
(3) 8.47
(4) $14\frac{13}{20}$
(5) 6
(6) 9
(7) $15.50
(8) $\frac{1}{8}$
(9) 75% *or* 75
(10) 35 billion
(11) $14
(12) 10
(13) 12

(14) $4.20
(15) $1.44
(16) 1 ft. 8 in. *or* 20 in.
(17) 8 cc. *or* 8
(18) $59.47
(19) 10
(20) 50% *or* 50
(21) 40 sq. ft. *or* 40
(22) $\frac{1}{4}x$ *or* $\frac{x}{4}$
(23) 66 in. *or* 66
(24) $.73 *or* 73¢
(25) $30.60

Part II

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

(26) Allow 10 credits as indicated:

a 10 [1 credit]

b 1941 [1 credit]

c 200 billion dollars [1 credit]

d approximately 60–65 billion dollars [2 credits]

e 1946 [1 credit]

f 1946 [1 credit]

g approximately 200 billion dollars greater *or* approximately 5 times greater [2 credits]

h 1948, 1949 [1 credit]

(27) Allow 10 credits as indicated:

a $172 [6 credits]

b $51.60 [4 credits]

(28) Allow 10 credits as indicated:

a 250 [2 credits]   *b* 14 [4 credits]   *c* 1555 *or* 1556 [4 credits]

[OVER]

(29) Allow 10 credits as indicated:

    a $525   [3 credits]   *b* $190   [4 credits]   *c* 30%   [3 credits]

(30) Allow 10 credits as indicated:

    a $2.76   [4 credits]

    b Allow any acceptable explanation in pupil's own words.   [5 credits]

    c $.25 *or* 25¢   [1 credit]

(31) Allow 10 credits as indicated:

    a $10.51   [8 credits]   *b* $10.49   [2 credits]

(32) Allow 10 credits as indicated:

    a $30   [2 credits]   *c* $110   [3 credits]

    b 200   [2 credits]   *d* $ 80   [3 credits]

(33) Allow 10 credits, 2 credits for each of the following:

    a (1) $n - 12 = 308$

           or

           $n = 308 + 12$

    (3) $\dfrac{n}{4} = 3$

        or

        $n = 3 \times 4$

    (2) $n + 30 = 500$

          or

          $n = 500 - 30$

    (4) $2n = 132$

        or

        $n \times 2 = 132$

        or

        $n = \dfrac{132}{2}$

    b $x = 8$

(34) 13 ft.   [10 credits]