The University of the State of New York

320TH HIGH SCHOOL EXAMINATION

MATHEMATICS (Preliminary)

Wednesday, January 27, 1954 — 9.15 a. m. to 12.15 p. m., only

---

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 on pages 4 and 5 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)

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*.
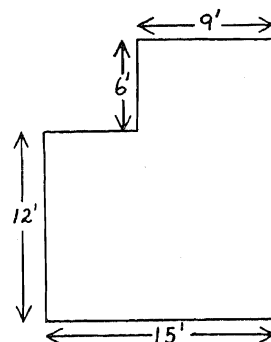
26 A man decides to buy government bonds through the payroll-savings plan of the company for which he works. During the year he plans to buy 20 bonds at $18.75 each. How much should be withheld from his pay check each month in order to carry out this plan? [10]

27 After all deductions have been made, a man finds that he must pay an income tax on $2,760. The directions on the tax form instruct him to pay $444 plus 24.6% of the amount over $2,000. How much tax must he pay? [10]

28 The floor plan of a Scout meeting room is pictured in the figure at the right. The Scouts wish to cover the floor with linoleum that sells for $2.50 a square yard.
- *a* How many square yards of linoleum will be needed? [7]
- *b* What will be the total cost of the linoleum? [3]

29 What will be a housewife's total saving if she buys the items listed below at the sale prices instead of at the regular prices? [10]

sale prices	regular prices
2 boxes of salt for 21¢	11¢ a box
6 bars of soap for 25¢	5¢ a bar
3-pound can of shortening for 95¢	35¢ a pound
1 dozen lemons for 65¢	7¢ apiece
2 packages of frozen peas for 45¢	25¢ a package

30 A salesman drove his car 48,064 miles in a year, averaging 16 miles on a gallon of gasoline. The average price he paid for gasoline was 30 cents a gallon, including 6 cents for tax.
- *a* How many gallons of gasoline did the salesman use during that year? [4]
- *b* What was the total cost of the gasoline used? [3]
- *c* What per cent of the amount paid for gasoline was tax? [3]

31 Two wholesalers, *A* and *B*, sell identical products for the prices and discounts given below:
- *A* $750 — 20% discount — additional 2% discount for paying cash
- *B* $800 — 25% discount — additional 5% discount for paying cash
- *a* Which wholesaler makes the better offer to a buyer paying cash? [8]
- *b* What is the amount of the difference between the two offers? [2]

[2]

FOR TEACHERS ONLY

M

INSTRUCTIONS FOR RATING
MATHEMATICS (Preliminary)
Wednesday, January 27, 1954 — 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.

In the answers to questions in both part I and part II, mathematically correct variations in form will be allowed. Units need not be given when the wording．of the questions allows such omissions.

Part I

Allow 2 credits for each correct answer; allow no partial credit. Each answer must be reduced to its simplest form. For questions 21–25, allow credit if the student has written the correct answer instead of the letter *a*, *b*, or *c*.

(1) $27\frac{15}{16}$

(2) $11\frac{3}{4}$

(3) $157\frac{1}{2}$ *or* $\frac{315}{2}$

(4) $\frac{80}{3}$ *or* $26\frac{2}{3}$

(5) $15.02

(6) 98,000 *or* 98 thousand

(7) 2.4

(8) $154

(9) 2

(10) 20¢

(11) 32 inches

(12) 3

(13) $12.75

(14) 80 *or* 80%

(15) 24

(16) $87\frac{1}{2}$ *or* $87\frac{1}{2}\%$

(17) $3n - 2 = 34$ [Any letter may be used in place of *n*.]

(18) 28 feet

(19) 3

(20) 3¢

(21) *c*

(22) *b*

(23) *a*

(24) *b*

(25) *c*

Part II

Do not allow credit unless all necessary operations are given. Each answer must be reduced to its simplest form. If the student has given an incorrect answer to any question on part II, do not deduct total credit if the student has shown some correct reasoning or computation in his work. The amount of credit to be deducted is left to the judgment of the teacher and should depend upon the seriousness of the error(s) in the work. In a question consisting of several related parts, *a*, *b*, *c*, etc., if the answer for any part is incorrect, deduction should be made only for that particular part, provided succeeding parts have been correctly done on the basis of this incorrect answer and provided the work done is of comparable difficulty.

26 Allow a total of 10 credits for the following answer: $31.25

27 Allow a total of 10 credits for the following answer: $630.96

28 Allow a total of 10 credits as indicated:

 a 26   [7]

 b $65   [3]

[OVER]

29 Allow a total of 10 credits for the following answer: 40¢

30 Allow a total of 10 credits as indicated:
  a 3004   [4]
  b $901.20   [3]
  c 20 *or* 20%   [3]

31 Allow a total of 10 credits as indicated:
  a B   [8]
  b $18   [2]

32 Allow a total of 10 credits as indicated:
  a $n + 4$ [1]
  b $2n$ [1]
  c $4n + 4$ [2]
  d $4n + 4 = 24$ [2]
  e $n = 5$ [2]
  f 9   [2]

33 Allow a total of 10 credits, 2 credits for each of the following:
  a true
  b similar
  c nine
  d true
  e one eighth

MATHEMATICS (Preliminary)

Wednesday, January 27, 1954

Fill in the following lines:

Name of pupil..Name of school..

Part I

Answer all questions in Part I. Write the answer to each question on the line at the right. Each question counts 2 credits; no partial credit is allowed. Reduce each answer to its simplest form.

1 Add $18\frac{5}{16}$, $5\frac{3}{8}$, $4\frac{1}{4}$ 1................

2 Subtract $6\frac{3}{4}$ from $18\frac{1}{2}$ 2................

3 Multiply $31\frac{1}{2}$ by 5   3................

4 Divide 16 by $\frac{3}{5}$ 4................

5 Subtract \$4.98 from \$20   5................

6 Round off 97,850 to the *nearest thousand.*   6................

7 Divide 17.28 by 7.2   7................

8 Find $5\frac{1}{2}\%$ of \$2800   8................

9 How many more ounces of cheese are contained in a 10-ounce package than in a half-pound package?   9................

10 A man buys an electric light bulb for 24 cents, which includes a 20% tax. What is the cost of the bulb without tax?   10................

11 If the area of a square is 64 square inches, what is its perimeter?   11................

12 A certain grading job requires 81 cubic feet of topsoil. How many cubic yards of topsoil must be ordered?   12................

13 What is the interest on \$850 at 6% for 3 months?   13................

14 A school team won 16 of the 20 games played. What per cent of the games played did the team win?   14................

15 What is the value of $a^2 + ab$ if $a = 3$ and $b = 5$?   15................

16 If $\frac{7}{8}$ of a class of 32 pupils had perfect attendance, what per cent of the class had perfect attendance?   16................

17 Write the equation showing that if 3 times a certain number is decreased by 2 the result is equal to 34.   17................

18 A house plan is drawn using the scale $\frac{1}{4}$ in. $= 1$ ft. If on the plan the living room is 7 inches long, what is the actual length of the room?   18................

19 Solve for a: $5a + 8 = 23$ 19................

20 The cost of soup to a grocer was 9 cents per can and he sold it for 16 cents per can. If he allowed 25% of the selling price for expenses, what was his profit on each can of soup?   20................
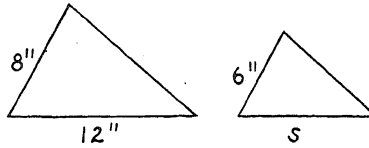
[4]   [OVER]

Follow these directions in answering questions 21, 22, 23, 24 and 25: Write on the line at the right of each statement the letter (*a, b* or *c*) representing the correct answer.

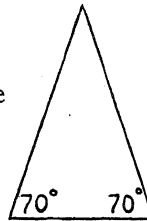21 One quarter of a million is the same as (*a*) 2,500 (*b*) 25,000
(*c*) 250,000

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

22 If the triangles at the right are similar, the length of side *s* in the smaller triangle is (*a*) 4″ (*b*) 9″ (*c*) 16″

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

23 The triangle at the right is (*a*) an isosceles triangle
(*b*) an equilateral triangle (*c*) a scalene triangle

23...............
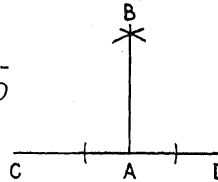
24 Two legs of a right triangle are 3″ and 4″. The length of the hypotenuse of this triangle is (*a*) 1″ (*b*) 5″ (*c*) 7″

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

25 In the diagram at the right, the line *AB* was constructed (*a*) bisecting *CD* (*b*) parallel to *CD*
(*c*) perpendicular to *CD* at *A*

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

[5]

32 In an athletic contest John scored 4 more points than Paul, and Tom scored twice as many points as Paul. The total number of points scored by the three boys was 24. Represent by n the number of points scored by Paul.

    a Express in terms of n the number of points scored by John.   [1]

    b Express in terms of n the number of points scored by Tom.   [1]

    c Express in terms of n the total number of points scored by the three boys.   [2]

    d Write the equation in terms of n which shows that the total number of points scored by the three boys was 24.   [2]

    e Solve the equation for n.   [2]

    f Find the number of points scored by John.   [2]

33 List the letters *a* through *e* on your answer paper. Then read carefully each of the following statements. If the statement is *true*, write the word *true* opposite the proper letter on your answer paper. If the statement is *false*, write the word that must be substituted for the underlined word to make the statement correct.   [10]

    a If two angles of a triangle are 20° and 70°, the triangle is a (an) right triangle.

    b A photograph and its enlargement would be an example of congruent figures.

    c An area equal to one square yard is three times an area equal to one square foot.

    d The area of a triangle whose base is 10 feet and whose altitude is 8 feet is forty square feet.

    e If the circle at the right represents a man's total income, and if the shaded part represents his savings, the fractional part of his income set aside for savings is one-sixth.