The University of the State of New York

REGENTS COMPETENCY TEST

MATHEMATICS

Tuesday, January 28, 1986 — 9:15 a.m.

The questions on this test measure your computational skills, your knowledge of mathematical concepts, and your ability to solve mathematical problems. Your answers to these questions must be recorded on the separate answer sheet. Use only a black lead pencil on your answer sheet.

When you have completed the test, you must sign the declaration which states that you did not see any of the questions or answers before taking this test and that you have neither given nor received help in answering any of the questions during the test. Your answer sheet cannot be accepted if you fail to sign this declaration.

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE TOLD TO DO SO.

DIRECTIONS TO STUDENTS

This test has two parts: Part A and Part B. In Part A there are twenty completion questions for which you are to give the answers. In Part B there are forty multiple-choice questions for which you are to choose the correct answer from among the four choices given.

Read the sample question for Part A shown below.

Part A Sample Question

I   Add: 435
            147
          +223

The correct answer is **805**. On the separate answer sheet, in the section titled "PART A," look at the box showing the answer to Sample Question I. Notice how the answer **805** has been written on the line provided. In the same way, write your answer to each of the questions in Part A on the answer line for that question. If you want to change an answer, erase your first answer. Then write the answer you want.

Now look at the sample question for Part B shown below.

Part B Sample Question

II   Which number represents forty thousand two hundred?

   (a) 4,020   (c) 40,200
   (b) 40,020   (d) 42,000

The correct answer is **40,200**, which is next to letter c. On the separate answer sheet, in the section titled "PART B," look at the box showing the row of answer circles for Sample Question II. Since letter c is the correct answer for Sample Question II, the circle for letter c has been filled in. For each question in Part B, decide which of the four choices given is the correct answer. Then, on the answer sheet, in the row of circles for that question, fill in the circle that has the same letter as the answer you have chosen. Mark only one answer for each question. If you want to change an answer, be sure to erase your first mark completely. Then mark the answer you want.

When you are told to start working, turn the page and begin with question 1. Work carefully and answer all the questions. Your score will be the number of questions you answer correctly. You may use scrap paper and the blank spaces of this test booklet to work out the answers to the questions, but be sure to mark all your answers on the separate answer sheet.

Part A

Answer all 20 questions in this part. Write your answers on the lines provided in PART A on the separate answer sheet. Use only a black lead pencil on the answer sheet.

1 Write a numeral for twenty thousand one hundred twenty.

2 Add: 3.12 + 31.2

3 Change $2\frac{1}{2}$ to an improper fraction.

4 Carl had $2.25 in nickels. How many nickels did he have?

5 Subtract: $\begin{array}{r} 703 \\ \underline{625} \end{array}$

6 Multiply: $\begin{array}{r} 826 \\ \times\ 52 \\ \hline \end{array}$

7 Multiply: $\begin{array}{r} 5.3 \\ \times\ .02 \\ \hline \end{array}$
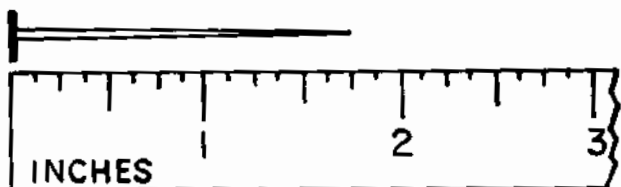
8 Subtract: 0.35 from 3.05

9 Add: 863 + 127 + 94 + 328

10 On a map, 1 centimeter represents 10 kilometers. How many centimeters represent 180 kilometers?

11 Divide: $35\overline{)3710}$

12 Toni received the following test scores:

   82, 75, 93, 90, 80

Find the mean (average) of these scores.

13 Solve for x: $4x + 3 = 15$

14 Add: $-8 + 5$

15 Divide 2.53 by 2.3.

16 Multiply –12 by –7.

17 Multiply: $\dfrac{3}{5} \times \dfrac{2}{5}$

18 Subtract: $\begin{array}{r} 3 \\ 1\frac{1}{3} \\ \hline \end{array}$

19 What is 9% expressed as a decimal?

20 What is $\dfrac{3}{5}$ of 75?

Part B

Answer all 40 questions in this part. Mark your answers in the rows of answer circles provided in PART B on the separate answer sheet. Use only a black lead pencil on the answer sheet.

21 What is the length of the pin shown in the diagram below?

(a) $\frac{3}{4}$ in (c) $1\frac{3}{4}$ in

(b) $1\frac{1}{2}$ in (d) $2\frac{1}{4}$ in

22 If a train travels at a rate of 70 miles an hour for 5 hours, how many miles does it travel?

(a) 14 (c) 350
(b) 75 (d) 420

23 What is the greatest common factor of 21 and 49?

(a) 1 (c) 3
(b) 7 (d) 21

24 Which is equivalent to 12.5?

(a) 125 (c) $1\frac{1}{4}$

(b) $12\frac{1}{2}$ (d) $\frac{1}{8}$

25 In the picture graph below, one represents 10 runs. What is the total number of runs represented?

(a) $5\frac{1}{2}$ (c) 55

(b) 51 (d) 60

26 Which is *not* a unit in the metric system?

(a) gram (c) meter
(b) liter (d) quart

27 If the sales tax rate is 7%, what is the amount of sales tax that must be paid on a $193 coat?
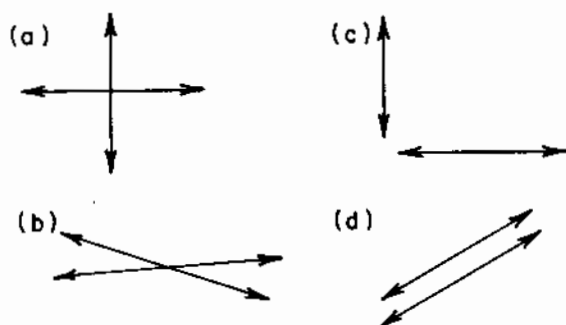
(a) $1.35 (c) $135.10
(b) $13.51 (d) $1351

28 What is 38,654 rounded to the nearest thousand?
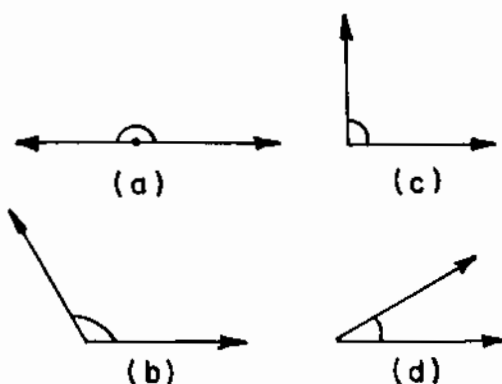
(a) 50,000 (c) 39,000
(b) 40,000 (d) 38,000

29 Which drawing is an example of parallel lines?

(a)

(c)

(b)

(d)

30 Bill had $45 in his checking account. He made a deposit of $22 and then wrote a check for $31. What is the balance in his account?

(a) $8   (c) $54
(b) $36   (d) $98

31 Which angle has a measure closest to 30°?

(a)

(c)

(b)

(d)

32 One kilometer equals 1000 meters. How many kilometers equal 7500 meters?

(a) 7   (c) 75
(b) 7.5   (d) 750

33 Sam bought a notebook for $3.25, 3 pencils for $.15 each, and 2 assignment pads for $.55 each. What change should he have received from a $5 bill?

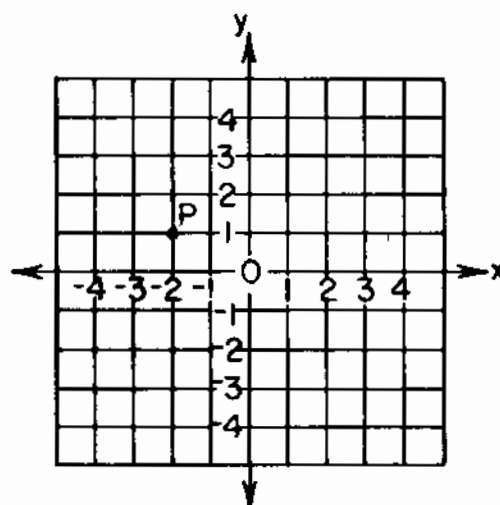(a) $.20   (c) $3.95
(b) $.30   (d) $4.80

34 The cost of renting a computer is as follows:

     $25 for the first week
     $20 for the second week
     $15 for each additional week

What is the total cost of renting a computer for six weeks?

(a) $60   (c) $105
(b) $90   (d) $135

35 On the graph below, what are the coordinates of point P?

(a) (1,−2)   (c) (−2,−1)
(b) (−1,−2)   (d) (−2,1)

36 The chart below shows prices for window shades. What is the price of a window shade that is 34 inches wide and 58 inches long?

PRICES FOR WINDOW SHADES

SIZE	24⅛ to 30 in. WIDE	30⅛ to 36 in. WIDE	36⅛ to 42 in. WIDE	42⅛ to 48 in. WIDE	48⅛ to 60 in. WIDE
12 to 36 in. LONG	$49.99	$59.99	$69.99	$74.99	$ 84.99
36⅛ to 42 in. LONG	$59.99	$65.99	$74.99	$79.99	$ 94.99
42⅛ to 48 in. LONG	$64.99	$71.99	$79.99	$84.99	$104.99
48⅛ to 54 in. LONG	$69.99	$75.99	$84.99	$94.99	$114.99
54⅛ to 60 in. LONG	$74.99	$81.99	$89.99	$99.99	$119.99

(a) $75.99
(b) $81.99

(c) $84.99
(d) $94.99

37 Jenny bought a computer for a $50 downpayment and 12 monthly payments of $25 each. What was the total cost of the computer?

(a) $75
(b) $300

(c) $350
(d) $600

38 What is the value of $2^3 + 3$?

(a) 9
(b) 11

(c) 12
(d) 125

39 Which statement is true?

(a) $-2 < 6$
(b) $-4 < -6$

(c) $-12 > 1$
(d) $-107 > -4$

40 Which number has the largest value?

(a) 0.035
(b) 0.053

(c) 0.35
(d) 0.5

41 The probability of a person's winning a prize in a certain contest is 1 out of 200. If 1400 people enter the contest, how many people should win a prize?

(a) 700
(b) 200

(c) 70
(d) 7

42 During one day, the temperature in degrees Celsius was $-7°$ in the morning and $9°$ in the afternoon. How many degrees Celsius did the temperature rise?

(a) 16°
(b) 2°

(c) 17°
(d) 19°

43 Two angles of a triangle measure 40° and 100°. How many degrees are in the measure of the third angle of the triangle?

(a) 180
(b) 140

(c) 50
(d) 40

44 Jason's school day began at 8:15 a.m. and ended at 2:45 p.m. How long was his school day?

(a) 6 hours   (c) $6\frac{1}{2}$ hours

(b) $6\frac{1}{4}$ hours   (d) $6\frac{3}{4}$ hours

45 Which whole number is neither prime nor composite?

(a) 1   (c) 3
(b) 2   (d) 4

46 What is the quotient of 19.52 divided by 100?

(a) 0.1952   (c) 195.2
(b) 1.952   (d) 1952

47 Marie receives a 30% commission on all greeting cards she sells. How much is her commission if her sales total $75.00?
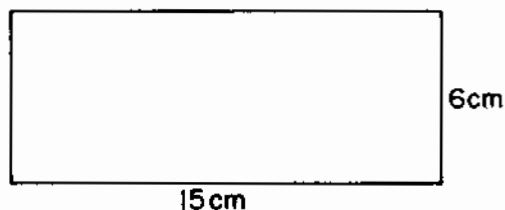
(a) $2.25   (c) $22.50
(b) $2.50   (d) $25.00

48 Which is the closest estimate of the product of 337 and 29?

(a) 900   (c) 9,000
(b) 6,000   (d) 90,000

49 The annual salaries of five families are $7,000, $10,000, $12,000, $20,000, and $31,000. What is the median annual family salary?

(a) $12,000   (c) $31,000
(b) $16,000   (d) $40,000

50 What is the perimeter of the rectangle below?

6cm

15cm

(a) 21 cm   (c) 90 cm
(b) 42 cm   (d) 180 cm

51 Given the formula

$$A = \frac{1}{2} h(a + b).$$
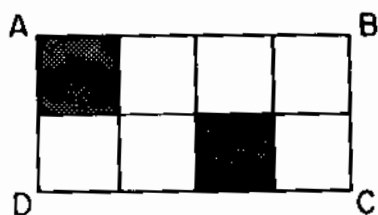
If $h = 6$, $a = 3$, and $b = 9$, what is the value of A?

(a) 18   (c) 72
(b) 36   (d) 144

52 Which is 100% of 60?

(a) 0.6   (c) 60
(b) 6   (d) 6000

53 What percent of rectangle *ABCD* below is shaded?

(a) 6% (c) 25%
(b) 2% (d) 75%

54 What value of *p* makes this proportion true?

$$2:5 = p:30$$

(a) $p = 75$ (c) $p = 3$
(b) $p = 12$ (d) $p = 6$

55 If one die with sides numbered 1 through 6 is tossed, what is the probability of getting a number less than 5?

(a) $\frac{1}{6}$ (c) $\frac{4}{6}$

(b) $\frac{2}{6}$ (d) $\frac{5}{6}$

56 Which represents an irrational number?

(a) $\sqrt{16}$ (c) $\sqrt{49}$

(b) $\sqrt{36}$ (d) $\sqrt{59}$

57 In Loretta's class, 25% of the students joined the Mathematics Club. If 7 students joined the Mathematics Club, how many students are in Loretta's class?
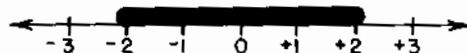
(a) 18 (c) 28
(b) 25 (d) 32

58 What percent of 20 is 3?

(a) 15% (c) 3%

(b) 20% (d) $6\frac{2}{3}$%

59 The regular price of a suit is $150. What is the cost of the suit if it is on sale at a 20% discount?

(a) $30 (c) $120
(b) $75 (d) $130

60 Which sentence is represented by the graph below?

(a) $-2 < x \le 2$ (c) $-2 \le x < 2$
(b) $-2 < x < 2$ (d) $-2 \le x \le 2$