The University of the State of New York

REGENTS COMPETENCY TEST

MATHEMATICS

Wednesday, June 19, 1991 — 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.

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 the numeral for five thousand ninety-two.

2 The bar graph shows the average daily temperature in Albany, New York, during a week in November. How many days was the temperature greater than 40°?

AVERAGE DAILY TEMPERATURE
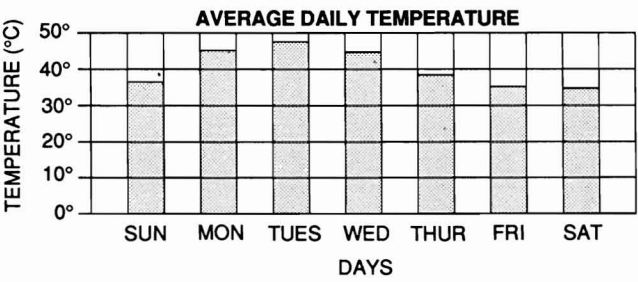
3 Add: 8.45 + 0.652 + 1.5

4 Candy bars cost 45 cents each. What is the greatest number of candy bars Raoul can buy if he has $3.00?

5 Subtract: 85.58
                37.79

6 Lamont wants to buy a compact disc player that costs $350. He agrees to make a downpayment of $50 on the purchase and pay the remaining balance in monthly installments of $60 each. How many months will it take Lamont to pay for the compact disc player?

7 What is the mean (average) of the following set of numbers?

    10, 13, 23, 17, 22

8 The graph below shows the number of movie stars seen at a restaurant last summer. Each ◇ represents four movie stars. How many movie stars were seen in July?

MOVIE STARS SEEN
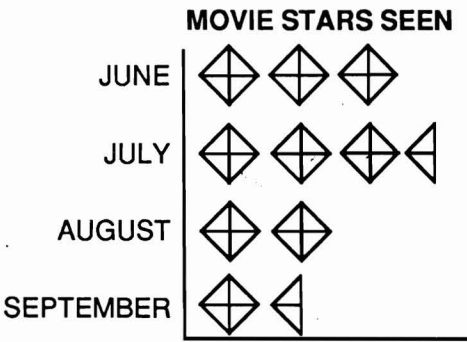
|	
9 Find the perimeter of a square whose side has length 7.	**15** What is $\frac{3}{4}$ of 40?
10 Divide: $96\overline{)7488}$	**16** What is the sum of –20 and +16?
11 Reduce $\frac{18}{42}$ to lowest terms.	**17** What is 377,726 rounded to the nearest ten thousand?
12 What is the median of the following scores? 40, 35, 70, 75, 30, 45, 30	**18** Add: $\frac{1}{5} + \frac{2}{3}$
13 Solve for p: $7p - 3 = 18$	**19** Multiply: $(-4)(2)(-3)$
14 If the diameter of a circle is 12, find the length of the radius.	**20** What is the lowest common denominator of $\frac{3}{4}$ and $\frac{5}{6}$?

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 The graph below shows the temperature for various times of day. At what time did the temperature reach 20°C?

TEMPERATURE DURING THE DAY
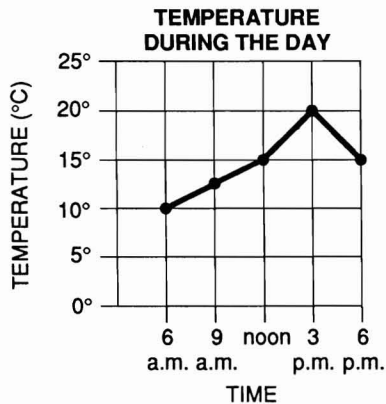
(1) 6:00 a.m. (3) 3:00 p.m.
(2) noon (4) 6:00 p.m.

22 What is the length of the line segment *TJ* shown below?
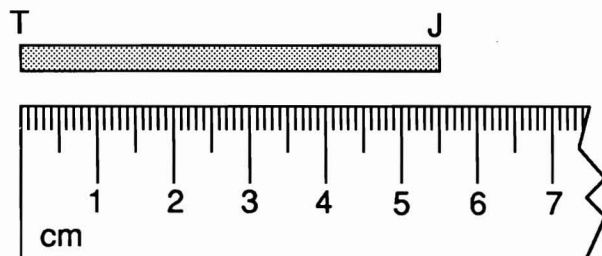
(1) 55 cm (3) 0.55 cm
(2) 5.5 cm (4) 5 cm

23 The chart below shows the average monthly temperature for certain cities in the United States. What is the average monthly temperature for August in Miami, Florida?

AVERAGE MONTHLY TEMPERATURE (°F)

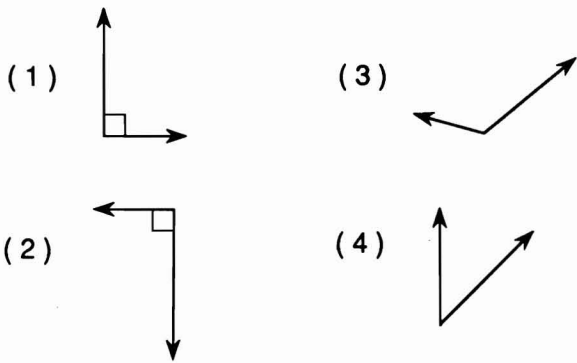|	Juneau, Alaska	Nashville, Tennessee	Miami, Florida	San Francisco, California
Jan	−11	42	68	50
Feb	0	44	68	53
Mar	9	53	71	54
Apr	29	62	74	56
May	47	70	77	57
June	58	78	80	59
July	60	81	82	59
Aug	55	80	82	59
Sept	44	74	81	62
Oct	27	63	78	61
Nov	3	52	72	57
Dec	−8	44	69	52

(1) 68 (3) 81
(2) 80 (4) 82

24 The fraction $\frac{19}{3}$ may be expressed as which mixed number?

(1) $5\frac{1}{3}$ (3) $7\frac{2}{3}$

(2) $6\frac{1}{3}$ (4) $16\frac{1}{3}$

**25** Which drawing shows an acute angle?

(1)

(2)

(3)

(4)

26 Jill has $282.15 in her checking account. If she writes checks for $25 and $46.75, how much money will be left in her account?

(1) $210.40   (3) $329.15
(2) $235.15   (4) $353.90

27 What is the ratio of *AB* to *BC* in the right triangle below?

(1) $\frac{3}{5}$ (3) $\frac{4}{5}$

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

28 Which number is equal to 5^3?

(1) 8   (3) 53
(2) 15   (4) 125

29 Which number is *not* equal to 25%?

(1) $\frac{1}{4}$ (3) 0.25

(2) 2.5   (4) $\frac{25}{100}$

30 Solve for *x*: $\frac{3}{4} = \frac{x}{16}$

(1) 15   (3) 12
(2) 14   (4) 9
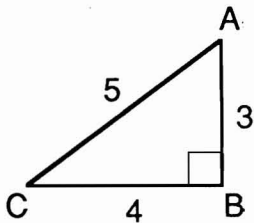
31 In the morning, the temperature was +5°C. By afternoon the temperature had risen to +31°C. How many degrees did the temperature increase during that day?

(1) 26°   (3) 30°
(2) 28°   (4) 36°

32 An egg truck carrying 200 dozen eggs was involved in an accident. Half of the eggs were broken. What is the *total number* of eggs broken in this accident?

(1) 6   (3) 400
(2) 100   (4) 1200

33 On the graph below, which point has coordinates (2,–3)?
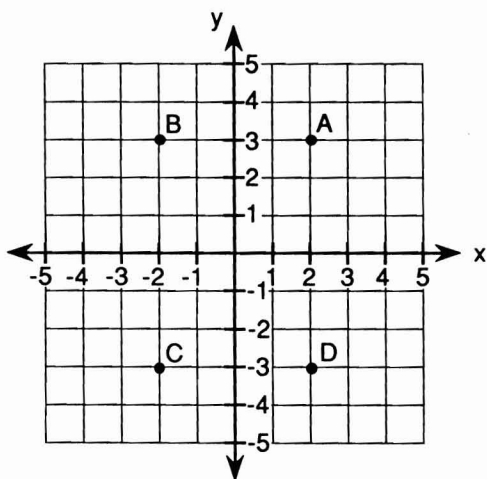
(1) *A*   (3) *C*
(2) *B*   (4) *D*

34 Which is a prime number?

(1) 12   (3) 14
(2) 13   (4) 15

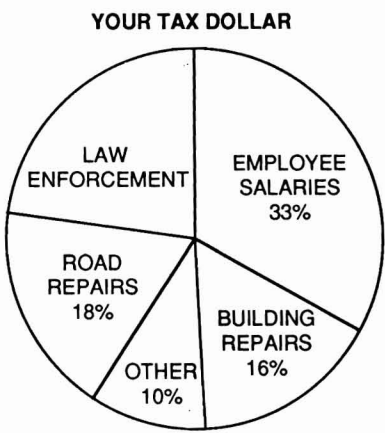**35** What is the largest number less than 50 that is divisible by 4?

(1) 16   (3) 48
(2) 40   (4) 49

36 Tracy bought toothpaste for $3.73, a toothbrush for $2.48, and mouthwash for $5.39. If she paid for the items with a $20 bill, how much change should she receive?
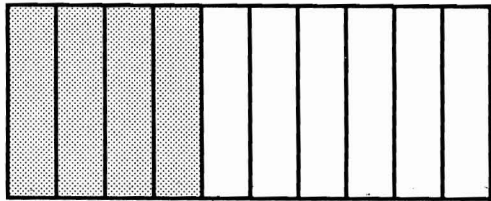
(1) $11.60   (3) $9.40
(2) $9.60   (4) $8.40

37 What percent of the city's property tax dollar is spent on law enforcement?

YOUR TAX DOLLAR

(1) 23%   (3) 77%
(2) 33%   (4) 283%

38 What percent of the rectangle below is shaded?

(1) 4% (3) 40%
(2) 14% (4) 140%

39 On a map, 1 inch represents 10 miles. If the actual distance between two cities is 25 miles, the distance on the map between the two cities is

(1) 20.5 in (3) 2.5 in
(2) 2 in (4) 25 in

40 Which is the shortest length?

(1) 1 meter
(2) 1 centimeter
(3) 1 kilometer
(4) 1 millimeter

41 Which set of integers is arranged from least value to greatest value?

(1) −1, −3, 1, 3 (3) −3, −1, 1, 3
(2) −1, 1, −3, 3 (4) 3, 1, −3, −1

42 Malcolm kept $1200 in the bank for 1 year. How much interest did he earn on that money if the bank pays an annual interest rate of 8%?

(1) $9.60 (3) $150
(2) $96 (4) $960

43 A bag contains two red marbles and three blue marbles. If one marble is drawn from the bag at random, what is the probability that the marble will be red?

(1) $\frac{2}{5}$ (3) $\frac{3}{5}$

(2) $\frac{1}{2}$ (4) $\frac{2}{3}$

44 Which is the best estimate of 57 × 33?

(1) 1200 (3) 2000
(2) 1800 (4) 2400

45 Leslie earns $2.50 per hour babysitting. If she babysits from 7:00 p.m. to 11:30 p.m., how much will she earn?

(1) $17.50 (3) $11.25
(2) $13.75 (4) $10.50

46 What is the value of

$$3(4 + 5) - \frac{(7 - 3)}{2}?$$

(1) 7   (3) 23
(2) 13   (4) 25

47 Which group of fractions is arranged in order from smallest to largest?

(1) $\frac{2}{7}, \frac{2}{5}, \frac{2}{3}$ (3) $\frac{2}{5}, \frac{2}{7}, \frac{2}{6}$

(2) $\frac{1}{8}, \frac{1}{5}, \frac{1}{7}$ (4) $\frac{1}{2}, \frac{1}{4}, \frac{1}{3}$

48 Which value of x will make the sentence $2x + 1 > 7$ a true statement?

(1) 1   (3) 3
(2) 2   (4) 4

49 Three gallons of fuel costs a total of $2.85. What is the cost of 10 gallons of fuel?

(1) $8.55   (3) $10.50
(2) $9.50   (4) $28.50

50 A stereo that is regularly priced at $280 is on sale for 25% off. What is the sale price of the stereo?

(1) $70   (3) $210
(2) $140   (4) $240

51 Which statement represents the sentence below?

Two more than a number, x, is 20.

(1) $x + 2 = 20$ (3) $2x = 20$
(2) $x + 2 > 20$ (4) $x + 20 = 2$

52 Evaluate: $\sqrt{25} + \sqrt{100}$

(1) 15   (3) 55
(2) 25   (4) 125

53 What is the length of line segment *HD* on the graph below?

(1) 1   (3) 5
(2) 6   (4) 4

54 Amanda bought three pairs of socks. The total cost was $7.29, which included a $0.54 sales tax. What was the price of each pair of socks before taxes?

(1) $2.25   (3) $2.43
(2) $2.35   (4) $2.61

55 What is the value of $12 \div \frac{1}{2} + 1$?

(1) 7   (3) 18
(2) 8   (4) 25
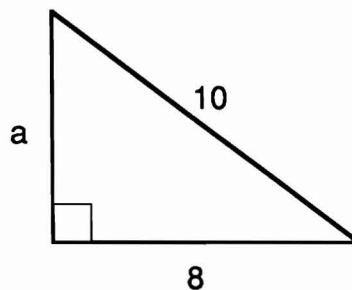
56 How many kilometers are equal to 10,000 meters?

(1) 1   (3) 100
(2) 10   (4) 1,000

57 Which number's value is closest to 6?

(1) $5\frac{1}{2}$ (3) $6\frac{1}{2}$

(2) $5\frac{3}{4}$ (4) $6\frac{3}{4}$

58 Using the formula $a^2 + b^2 = c^2$, what is the value of a in the right triangle below?

(1) 6   (3) 36
(2) 2   (4) 8

59 What is the difference between 29 and $2\frac{1}{3}$?

(1) $26\frac{1}{3}$ (3) $27\frac{1}{3}$

(2) $26\frac{2}{3}$ (4) $27\frac{2}{3}$

60 Using the formula $A = \pi r^2$, what is the area of a circle whose diameter is 6?

(1) 6π (3) 3π
(2) 9π (4) 36π