

The University of the State of New York
REGENTS COMPETENCY TEST

MATHEMATICS

Tuesday, January 27, 1987—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.

Copyright 1987
THE UNIVERSITY OF THE STATE OF NEW YORK
THE STATE EDUCATION DEPARTMENT
ALBANY, NEW YORK 12234

No part of this test may be reproduced and/or transmitted by any means without written permission.

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 Add:
$$\begin{array}{r} 538 \\ 79 \\ + 423 \\ \hline \end{array}$$

7 Solve for a : $2a + 1 = 5$

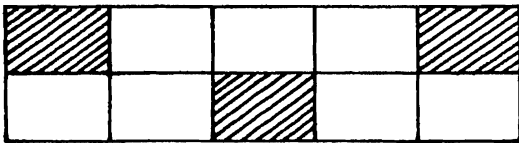
2 Add: $2.3 + 5.08 + 0.76$

8 Divide: $0.2 \overline{)1.26}$

3 Subtract:
$$\begin{array}{r} 3070 \\ 1583 \\ \hline \end{array}$$

9 Multiply:
$$\begin{array}{r} 709 \\ \times 68 \\ \hline \end{array}$$

4 What fractional part of the rectangle below is shaded?



10 What is the greatest common factor of 8, 12, and 20?

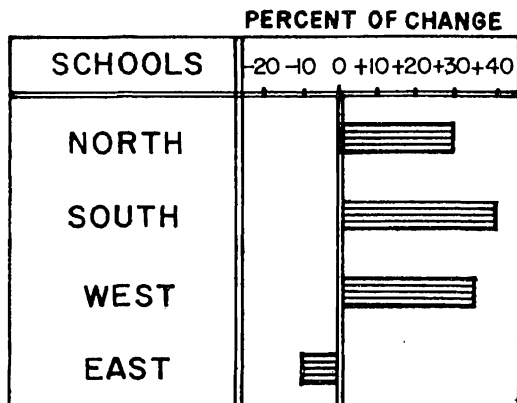
11 Add: $-7 + 4$

5 Find the mean (average) of 25, 30, 45, and 20.

12 On a map, 1 centimeter represents 12 kilometers. How many kilometers are represented by a length of $2\frac{1}{2}$ centimeters on the map?

6 Divide: $7 \overline{)28}$

13 The bar graph below shows the percent of change in school enrollments during the last ten years. Which school had a *decrease* in enrollment?



14 Multiply -4 by 7 .

15 Express $\frac{3}{4}$ as a decimal.

16 Multiply 734.13 by 1000 .

17 A rectangle has a length of 8 and a width of 3 . What is the perimeter of the rectangle?

18 In a triangle, one angle measures 85° and another angle measures 25° . What is the number of degrees in the measure of the third angle of the triangle?

19 In a school, 350 students took a test. If 8% of the students failed the test, how many students failed the test?

20 If $y = 3x - 4$, what is the value of y when $x = 4$?

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 Which numeral represents two hundred thousand thirty-four?

- (a) 200,034 (c) 234,010
(b) 200,340 (d) 2,001,034

22 Which is a measure of length?

- (a) Celsius (c) meter
(b) liter (d) gram

23 If a plane traveled at the rate of 500 miles per hour for 6 hours, how many miles did it travel?

- (a) 82 (c) 3000
(b) 506 (d) 3500

24 What is the value of 7^2 ?

- (a) 14 (c) 128
(b) 49 (d) 343

25 David put 3 half-dollars, 8 quarters, 7 dimes, 6 nickels, and 9 pennies into a coin bank. What was the total amount of money he put into the coin bank?

- (a) \$2.59 (c) \$4.54
(b) \$3.59 (d) \$4.59

26 Multiply: $\frac{1}{3} \times \frac{3}{5}$

- (a) $\frac{1}{15}$ (c) $\frac{3}{8}$
(b) $\frac{1}{5}$ (d) $\frac{1}{2}$

27 Written as a fraction, 70% is equal to

- (a) $\frac{1}{7}$ (c) $\frac{70}{1}$
(b) $\frac{7}{100}$ (d) $\frac{70}{100}$

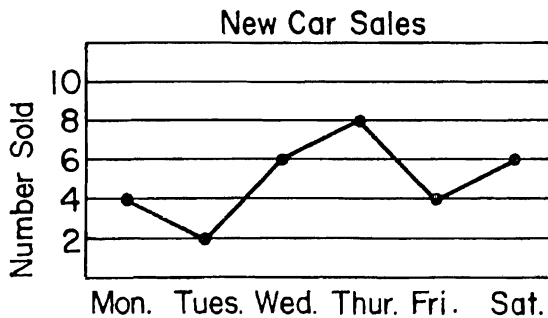
28 Tickets for a rock concert are on sale in blocks of 4 tickets. One block of 4 tickets costs \$68. If Jack gave the cashier \$150 to buy 2 blocks of tickets, how much change should he have received?

- (a) \$136 (c) \$17
 (b) \$82 (d) \$14

29 Which expression is *not* true?

- (a) $7.1 > 7.11$
 (b) $7.21 < 7.31$
 (c) $7.54 < 7.77$
 (d) $7.17 > 7.16$

30 The graph below shows the number of new cars sold each day for one week. What is the difference between the greatest number of cars sold and the least number of cars sold during the week?



- (a) 8 (c) 6
 (b) 2 (d) 4

31 The length of one board is $4\frac{3}{4}$ feet and the length of another board is $3\frac{1}{2}$ feet.

What is the difference in their lengths?

- (a) $1\frac{1}{4}$ feet (c) $1\frac{5}{14}$ feet
 (b) $1\frac{1}{2}$ feet (d) $8\frac{1}{2}$ feet

32 What is 215.9256 rounded to the nearest hundredth?

- (a) 200 (c) 215.926
 (b) 215.92 (d) 215.93

33 Which geometric figure does *not* have to contain a right angle?

- (a) a rectangle (c) a square
 (b) a right triangle (d) a trapezoid

34 Solve for n : $\frac{10}{3} = \frac{n}{12}$

- (a) 120 (c) 30
 (b) 40 (d) 4

35 Which fraction has been reduced to *lowest terms*?

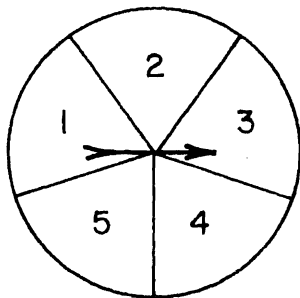
(a) $\frac{80}{90}$

(c) $\frac{7}{21}$

(b) $\frac{45}{90}$

(d) $\frac{8}{25}$

36 The spinner below is divided into 5 equal parts. What is the probability that the spinner will stop on an even number on the next spin?



(a) $\frac{1}{5}$

(c) $\frac{3}{5}$

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

(d) $\frac{4}{5}$

37 Jane earns \$3.50 an hour. How much will she earn if she works $4\frac{1}{2}$ hours?

(a) \$14.00

(c) \$15.00

(b) \$14.25

(d) \$15.75

38 What does $17.3 - 5.72$ equal?

(a) 11.58

(c) 12.42

(b) 11.62

(d) 12.48

39 A bicycle is regularly priced at \$119.00. If it is on sale at a 10% discount, how much money can be saved by buying it on sale?

(a) \$11.90

(c) \$107.00

(b) \$12.00

(d) \$107.10

40 Subtract $\frac{1}{2}$ from $\frac{7}{8}$.

(a) $\frac{6}{6}$

(c) $\frac{3}{8}$

(b) $\frac{5}{7}$

(d) $\frac{8}{10}$

41 Peggy has \$153.75 in her checking account. If she withdrew \$12.25 every month for a year, how much would be left in her account?

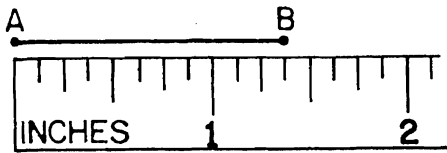
(a) \$6.75

(c) \$19.00

(b) \$16.75

(d) \$31.25

42 What is the length of the line segment joining the points A and B shown in the diagram below?



- (a) $1\frac{1}{16}$ in (c) $1\frac{3}{8}$ in
 (b) $1\frac{1}{4}$ in (d) $1\frac{1}{2}$ in

43 If 2 pounds of bananas cost \$.59, what would be the cost of 6 pounds of bananas?

- (a) \$.67 (c) \$3.54
 (b) \$1.77 (d) \$7.08

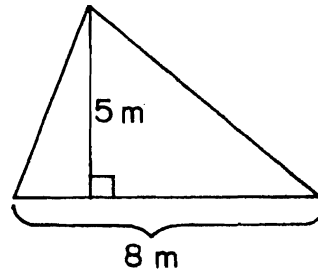
44 The rates for a long-distance telephone call are:
 \$1.00 for the first 3 minutes
 \$.30 for each additional minute

What is the cost of a long-distance telephone call that is 8 minutes long?

- (a) \$3.40 (c) \$2.50
 (b) \$2.64 (d) \$2.40

45 The area of a triangle is found by using the formula $A = \frac{1}{2}bh$.

What is the area of the triangle below?



- (a) 13 m^2 (c) 32 m^2
 (b) 20 m^2 (d) 64 m^2

46 What is the median of the following numbers?

26, 37, 45, 56, 56

- (a) 37 (c) 45
 (b) 44 (d) 56

47 Divide: $2\frac{5}{8} \div 1\frac{1}{2}$

- (a) $3\frac{15}{16}$ (c) $\frac{4}{3}$
 (b) $1\frac{3}{4}$ (d) $\frac{4}{7}$

48 What is the positive square root of 16?

- (a) 256 (c) 8
(b) 16 (d) 4

49 Fifty is 25% of which number?

- (a) 2 (c) 25
(b) 12.5 (d) 200

50 Mrs. Sullivan earned \$540 during one week. If she paid 18% income tax on her earnings, how much income tax did she pay?

- (a) \$180.00 (c) \$48.60
(b) \$97.20 (d) \$9.72

51 What is the sum of $\frac{2}{3}$ and $\frac{1}{4}$?

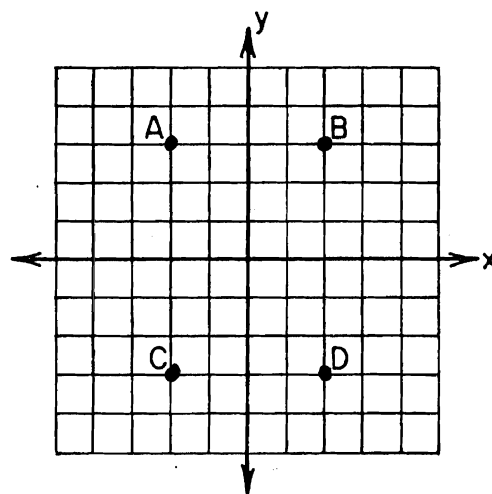
- (a) $\frac{11}{12}$ (c) $\frac{2}{12}$
(b) $\frac{7}{12}$ (d) $\frac{3}{7}$

52 Which mathematical sentence represents the following statement?

The product of 3 and x is less than 12.

- (a) $x + 3 < 12$ (c) $3x < 12$
(b) $x - 3 < 12$ (d) $\frac{x}{3} < 12$

53 On the graph below, which point has coordinates $(-2, 3)$?



- (a) A (c) C
(b) B (d) D

54 What is the length of a diameter of a circle with a radius of 7 centimeters?

- (a) 49 cm (c) 21 cm
(b) 22 cm (d) 14 cm


55 Jim bought 10 soft pretzels for \$1. If he sold them for 25¢ each, how much profit did he make?

- (a) \$1.00 (c) \$1.50
(b) \$2.50 (d) \$0.75

56 A dinner cost \$19.75. The best approximation of a 15% tip for the dinner is

- (a) \$5 (c) \$3
(b) \$2 (d) \$4

57 In the picture graph below, one

 represents 200 people.

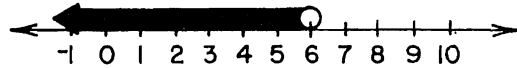
What is the total number of people represented?

NUMBER OF PEOPLE



- (a) 375 (c) 725
(b) 650 (d) 750

58 Which statement is represented by the graph below?



- (a) $x \leq 6$ (c) $x > 6$
(b) $x < 6$ (d) $x \geq 6$

59 A softball team won 12 out of 30 games. What percent of the games did the team win?

- (a) 40% (c) 12%
(b) 29% (d) 4%

60 The next prime number after 19 is

- (a) 20 (c) 22
(b) 21 (d) 23