

# REGENTS COMPETENCY TEST

## MATHEMATICS

**Monday, January 26, 2004 — 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 No. 2 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.**

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THE STATE EDUCATION DEPARTMENT  
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### Part A

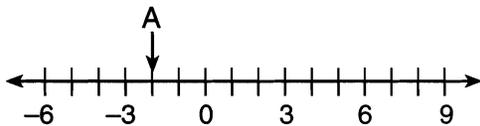
Answer all 20 questions in this part. Write your answers on the lines provided in PART A on the separate answer sheet. Use only a No. 2 pencil on the answer sheet.

1 Add:

$$\begin{array}{r} 462 \\ 103 \\ + 257 \\ \hline \end{array}$$

2 Divide:  $609 \div 3$

3 What number is located at A on the number line below?



4 Add:  $42.3 + 0.56 + 6.6$

5 Express  $\frac{47}{6}$  as a mixed number.

6 If 80 campers are going on a trip with 5 counselors, what is the average number of campers per counselor?

7 Subtract:

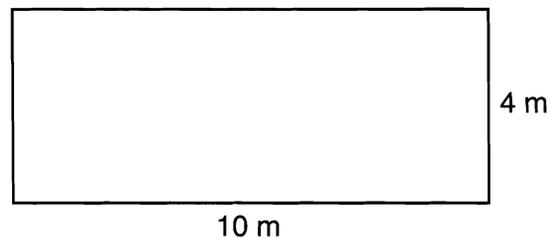
$$\begin{array}{r} 85.58 \\ - 37.79 \\ \hline \end{array}$$

8 What is the value of  $5^3$ ?

9 Multiply:

$$\begin{array}{r} 207 \\ \times 16 \\ \hline \end{array}$$

10 What is the total number of meters in the perimeter of the rectangle below?

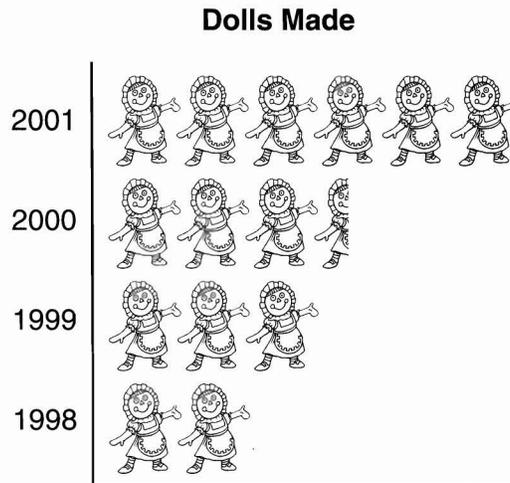


<p><b>11</b> Multiply: <math>\frac{5}{8} \times \frac{3}{4}</math></p>	<p><b>16</b> Divide <math>-25</math> by <math>-5</math>.</p>
<p><b>12</b> Reduce <math>\frac{30}{45}</math> to lowest terms.</p>	<p><b>17</b> Multiply:</p> $\begin{array}{r} 31.6 \\ \times 5.2 \\ \hline \end{array}$
<p><b>13</b> Solve for <math>y</math>: <math>3y + 7 = 19</math></p>	<p><b>18</b> What is the mode of the following set of numbers?</p> <p style="text-align: center;">40, 50, 50, 45, 60, 70, 45, 50</p>
<p><b>14</b> Divide: <math>0.4 \overline{)1.68}</math></p>	<p><b>19</b> Add: <math>2\frac{1}{6} + 3\frac{3}{4}</math></p>
<p><b>15</b> Find the sum of 13, 6, and <math>-4</math>.</p>	<p><b>20</b> What is the total number of square feet of carpeting needed to completely cover a floor that measures 12 feet by 9 feet?</p>

### 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 No. 2 pencil on the answer sheet.

21 The graph below shows the number of dolls made each year by a toy company.



Key:  = 1,000 dolls made

How many more dolls were made in 2001 than in 2000?

- (1) 2,000
- (2) 2
- (3) 2,500
- (4) 14,500

22 The table below can be used to find out how many gallons of gasoline a car will need to travel a given number of miles.

**Gasoline Usage**

Distance (miles)	Rate of Use (mpg)					
	10 mpg	15 mpg	20 mpg	25 mpg	30 mpg	35 mpg
8,000	800 gal	533 gal	400 gal	320 gal	267 gal	229 gal
10,000	1,000 gal	667 gal	500 gal	400 gal	333 gal	286 gal
12,000	1,200 gal	800 gal	600 gal	480 gal	400 gal	343 gal
16,000	1,600 gal	1,067 gal	800 gal	640 gal	533 gal	456 gal

If a car uses gasoline at a rate of 25 miles per gallon (mpg), how much gasoline will be needed to travel 10,000 miles?

- (1) 500 gal
- (2) 480 gal
- (3) 333 gal
- (4) 400 gal

**23** A bookbag that regularly costs \$24.35 is on sale for \$17.79. How much can be saved by buying the bookbag on sale?

- (1) \$13.44                      (3) \$7.66  
(2) \$8.45                        (4) \$6.56

**24** What is the difference between 10,000 and 379?

- (1) 9,371                        (3) 9,621  
(2) 9,620                        (4) 9,721

**25** Linda earned \$209 for working 38 hours. What was her hourly rate of pay?

- (1) \$3.35                        (3) \$17.10  
(2) \$5.50                        (4) \$7,942.00

**26** What is the least common multiple of 5, 8, and 10?

- (1) 400                          (3) 50  
(2) 80                            (4) 40

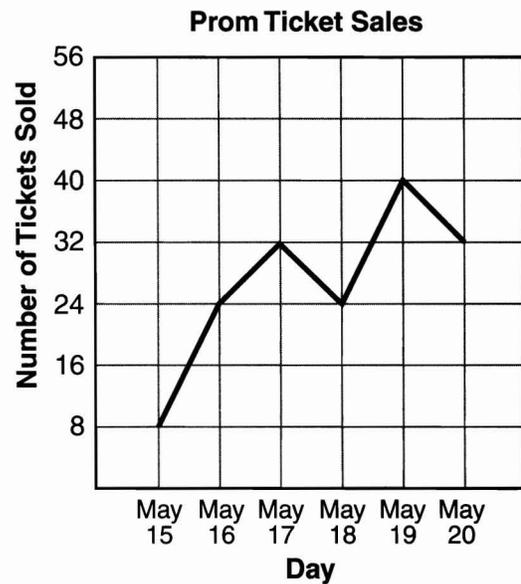
**27** Which unit is a measure of mass (weight)?

- (1) gram                        (3) meter  
(2) liter                        (4) degree Celsius

**28** An announcer reported that 23,000 people attended a football game. She had rounded the actual number to the nearest thousand. Which number could represent the actual attendance?

- (1) 22,214                      (3) 23,615  
(2) 22,871                      (4) 23,800

**29** The graph below shows the number of prom tickets sold on each of 6 days.



What was the total number of tickets sold?

- (1) 40                              (3) 160  
(2) 150                            (4) 170

**30** Solve for  $x$ :  $\frac{5}{8} = \frac{35}{x}$

- (1) 38                              (3) 175  
(2) 56                              (4) 280

**31** Which number is the best estimate of the product of 68 and 52?

- (1) 2,500                      (3) 3,500  
(2) 3,000                      (4) 4,000

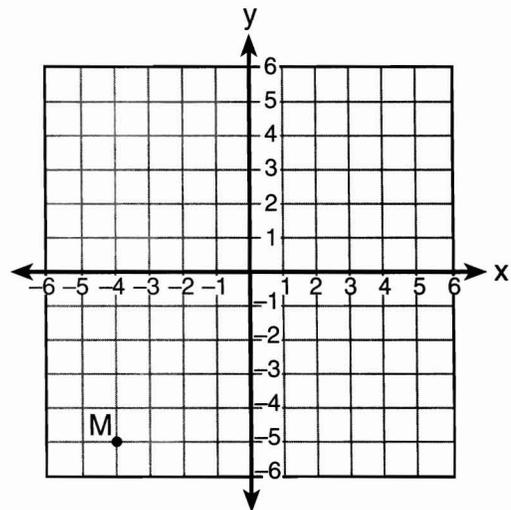
**35** In the number 1,532.67, which digit is in the hundreds place?

- (1) 1                              (3) 6  
(2) 5                              (4) 7

**32** A box contains two oranges, four apples, and six peaches. If a student picks one piece of fruit at random from the box, what is the probability that she will choose an apple?

- (1)  $\frac{1}{4}$                               (3)  $\frac{6}{12}$   
(2)  $\frac{4}{8}$                               (4)  $\frac{4}{12}$

**36** On the graph below, what are the coordinates of point  $M$ ?



- (1) (-4,-5)                      (3) (-5,-4)  
(2) (4,5)                              (4) (5,4)

**33** Ted bought some furniture and agreed to pay \$45 a month for 18 months. What was the total amount that Ted paid for the furniture?

- (1) \$650                              (3) \$810  
(2) \$725                              (4) \$975

**34** Which decimal is equal to thirty-six and eight thousandths?

- (1) 0.368                              (3) 36.08  
(2) 0.36008                              (4) 36.008

**37** Robyn receives a 25% commission on the textbooks she sells. If she sells textbooks worth a total of \$825.00, what is her commission?

- (1) \$25.00                              (3) \$618.75  
(2) \$206.25                              (4) \$1,031.25

**38** Mark earns \$16 each week. He saves \$3 of that money. What is the ratio of his savings to his earnings?

- (1)  $\frac{3}{16}$                       (3)  $\frac{16}{3}$   
(2)  $\frac{3}{13}$                       (4)  $\frac{13}{3}$

**39** Julian had a balance of \$600 in his bank account. He made a \$100 withdrawal and earned \$7.50 interest on his account. What is his new balance?

- (1) \$492.50                  (3) \$592.50  
(2) \$507.50                  (4) \$707.50

**40** 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 have received?

- (1) \$11.60                  (3) \$9.40  
(2) \$9.60                    (4) \$8.40

**41** If the sales tax is 8%, how much tax must be paid on a coat that costs \$92.00?

- (1) \$7.26                    (3) \$8.26  
(2) \$7.36                    (4) \$8.36

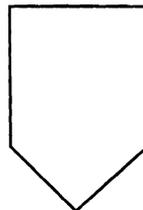
**42** Which number is divisible by 6?

- (1) 16                              (3) 63  
(2) 26                              (4) 96

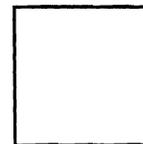
**43** Which integer has the greatest value?

- (1) -1                              (3) -20  
(2) -11                            (4) -4

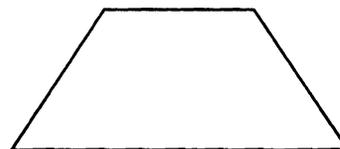
**44** Which of these polygons is *not* a quadrilateral?



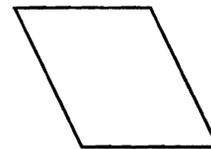
(1)



(3)



(2)



(4)

**45** If Jorge is  $x$  years old today, which expression represents his age 10 years ago?

- (1)  $10x$                         (3)  $x + 10$   
(2)  $10 - x$                     (4)  $x - 10$

**46** For a long-distance telephone call, Latrell was charged \$0.28 for the first minute, and \$0.13 for each additional minute. What was the total charge for his 12-minute call?

- (1) \$1.43                      (3) \$2.93  
 (2) \$1.71                      (4) \$3.08

**50** Lila began playing ball at 9:30 a.m. and finished at 1:00 p.m. How long did she play ball?

- (1) 5 hours                      (3)  $3\frac{1}{2}$  hours  
 (2)  $4\frac{1}{2}$  hours                  (4) 4 hours

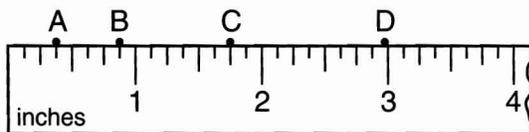
**47** Two cities that are 150 miles apart are 5 inches apart on a map. What is the scale used for the map?

- (1) 1 in = 30 mi              (3) 1 in = 3 mi  
 (2) 1 in = 150 mi            (4) 1 in = 750 mi

**51** If motor oil costs \$2.70 for 3 quarts, what is the cost of 7 quarts of oil?

- (1) \$0.90                      (3) \$6.30  
 (2) \$5.40                      (4) \$18.90

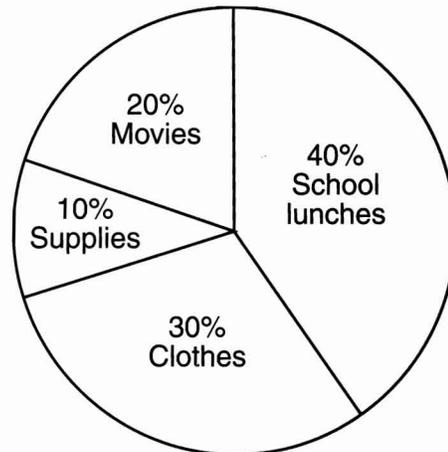
**48** On the ruler below, which letter indicates  $\frac{7}{8}$  inch?



- (1) A                              (3) C  
 (2) B                              (4) D

**52** The circle graph below shows how Kylie spent \$20 during 1 week.

**Weekly Expenses**



How much did Kylie spend on school lunches?

- (1) \$8.00                      (3) \$5.00  
 (2) \$2.00                      (4) \$4.00

**49** Which fraction has a value greater than 1?

- (1)  $\frac{4}{3}$                               (3)  $\frac{9}{10}$   
 (2)  $\frac{7}{8}$                               (4)  $\frac{6}{11}$

**53** What percent of the figure below is shaded?



- (1) 25%                      (3) 33.3%  
(2) 30%                      (4) 300%

**54** Given the formula  $A = \frac{(B + C)}{D} + E$ .

What is the value of  $A$  when  $B = 2$ ,  $C = 3$ ,  
 $D = 5$ , and  $E = 7$ ?

- (1)  $2\frac{2}{5}$                       (3) 8  
(2) 7                          (4) 12

**55** What is the prime factorization of 30?

- (1)  $2 \times 15$                       (3)  $3 \times 10$   
(2)  $5 \times 6$                       (4)  $2 \times 3 \times 5$

**56** There are 90 sixth grade students in a school.  
If 60 percent of these students collect  
baseball cards, how many students collect  
baseball cards?

- (1) 30                          (3) 54  
(2) 46                          (4) 60

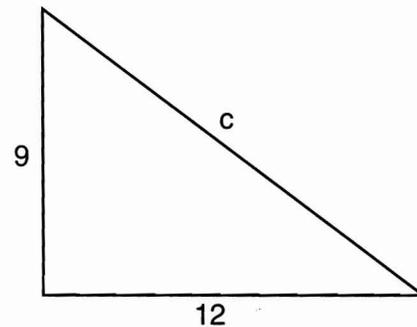
**57** What is the circumference of a circle whose  
radius is 5? (Use  $C = 2\pi r$  and  $\pi = 3.14$ )

- (1) 15.70                      (3) 62.80  
(2) 31.40                      (4) 78.50

**58** Evaluate:  $1 + 6 \times 8$

- (1) 48                          (3) 54  
(2) 49                          (4) 56

**59** What is the value of  $c$  in the right triangle  
below?



- (1) 15                          (3) 63  
(2) 21                          (4) 225

**60** Evaluate:  $\sqrt{25} + \sqrt{100}$

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