

# **MATHEMATICS**

**Wednesday, January 28, 1998 — 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.**

Copyright 1998

**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 No. 2 pencil on the answer sheet.

1 Subtract 122 from 234.

8 Round 5748 to the nearest hundred.

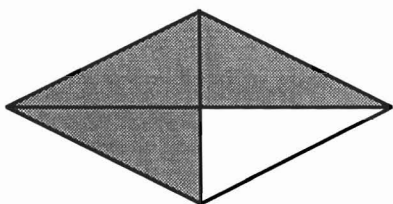
2 Add: 
$$\begin{array}{r} 1234 \\ + 567 \\ \hline \end{array}$$

9 Multiply: 
$$\begin{array}{r} 5.37 \\ \times 1.4 \\ \hline \end{array}$$

3 Add:  $73.2 + 6.91 + 5.8$

10 On a map, 1 inch represents 15 miles.  
How many inches represent 60 miles?

4 What fractional part of the figure below is shaded?



11 The graph below shows the days of snowfall during the period from November through March in Duluth.

### Snowfall in Duluth

November	**
December	****
January	*****
February	****
March	****

Each \* represents 3 days of snow

5 What is the quotient of  $-50$  divided by  $10$ ?

6 Reduce  $\frac{16}{24}$  to lowest terms.

How many more days did it snow in January than in March?

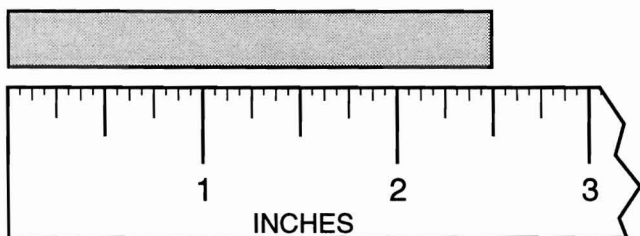
7 Solve for  $x$ :  $3x - 2 = 10$

<p><b>12</b> A rectangle has a length of 7 feet and a width of 3 feet. How many square feet are in the area of the rectangle?</p>	<p><b>17</b> If the length of the radius of a circle is 8, what is the length of the diameter?</p>
<p><b>13</b> Divide 2,222 by 22.</p>	<p><b>18</b> What is the greatest common factor (GCF) of 12 and 18?</p>
<p><b>14</b> Multiply: <math>\frac{1}{4} \times \frac{3}{8}</math></p>	<p><b>19</b> There are 280 students going on a field trip by bus. If each bus has 44 seats, what is the least number of buses needed so that every student has a seat?</p>
<p><b>15</b> What is the sum of +23 and -15?</p>	
<p><b>16</b> What is the value of <math>15 - 3 \times 2</math>?</p>	<p><b>20</b> When the temperature is 15° below zero, how many degrees must the temperature rise to reach 32° above zero?</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** What is the length of the bar shown below?



- (1) 1 inch                      (3) 3 inches  
(2) 2 inches                      (4)  $2\frac{1}{2}$  inches

- 22** Which number represents thirty thousand three?

- (1) 3,300                      (3) 30,030  
(2) 30,003                      (4) 30,300

- 23** A box of candy contains 5 caramels, 4 creams, and 3 fruit-filled. If Jamal chooses a piece of candy from the box without looking, what is the probability that he will choose a caramel?

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

- 24** Tamesha spent \$22.87 in the bookstore. She gave the cashier \$30.00. How much change should she receive?

- (1) \$7.13                      (3) \$22.57  
(2) \$8.13                      (4) \$52.87

- 25** Bill is 10 years old. How old will he be  $x$  years from now?

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

- 26** Ramón earns \$5.50 per hour working at a department store. If he works 28 hours, what is the total amount he will earn?

- (1) \$5.78                      (3) \$33.50  
(2) \$15.40                      (4) \$154.00

- 27** Which number has a value between 0.050 and 0.600?

- (1) 0.800                      (3) 0.055  
(2) 0.655                      (4) 0.008

**28** Maria saves 25% of her \$60.00 salary each week. How much does she save per week?

- (1) \$35.00                      (3) \$3.50  
(2) \$15.00                      (4) \$1.50

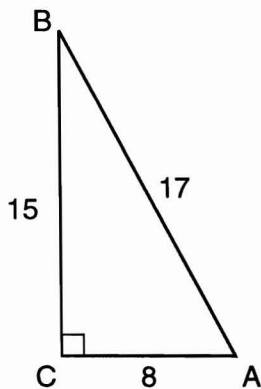
**29** Which number is 100 more than 999?

- (1) 1000                      (3) 9099  
(2) 1099                      (4) 9990

**30** The fraction  $\frac{16}{9}$  is equivalent to

- (1)  $9\frac{1}{7}$                       (3)  $1\frac{7}{9}$   
(2)  $7\frac{1}{9}$                       (4)  $\frac{9}{16}$

**31** In the triangle below, what is the ratio of AB to BC?



- (1)  $\frac{8}{15}$                       (3)  $\frac{17}{15}$   
(2)  $\frac{15}{17}$                       (4)  $\frac{17}{8}$

**32** The chart below shows math test scores for four students.

**Math Test Scores**

	Test 1	Test 2	Test 3
Paul	76	85	95
Annette	96	80	88
Roberto	95	94	80
Keesha	89	95	95

Which student had the highest mean (average) score?

- (1) Paul                      (3) Roberto  
(2) Annette                      (4) Keesha

**33** Which metric unit of measurement is best for estimating the distance between Chicago and New York City?

- (1) kilometer                      (3) kilogram  
(2) meter                      (4) liter

**34** What is the value of  $3^4$ ?

- (1) 7                      (3) 27  
(2) 12                      (4) 81

**35** Solve for  $x$ :  $\frac{12}{16} = \frac{x}{48}$

- (1) 32                      (3) 3  
(2) 36                      (4) 4

- 36** The rates for a long-distance telephone call are listed below.

\$0.50 for the first 4 minutes  
\$0.10 for each additional minute

What is the cost of a long-distance call that lasts 10 minutes?

- (1) \$0.60                      (3) \$2.10  
(2) \$1.10                      (4) \$2.60

- 37** Josie purchased a car. She agreed to pay \$2,000 down and \$300 per month for 24 months. What will be the total cost of the car?

- (1) \$9,200                      (3) \$2,324  
(2) \$7,200                      (4) \$2,300

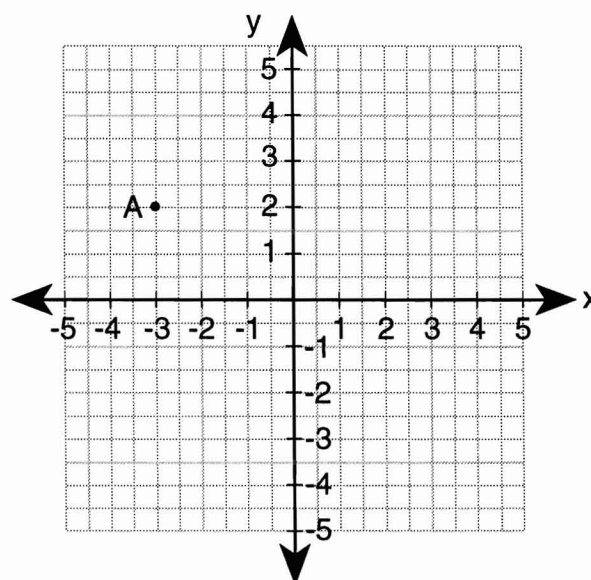
- 38** The test scores on a recent exam in Ms. James' class were 58, 61, 67, 75, 75, 81, 83, 85, 87, 88, 90, 94, 97, 97, and 100. What was the median score for this exam?

- (1) 75                          (3) 85  
(2) 81                          (4) 97

- 39** The formula for the volume of a rectangular prism is  $V = \ell wh$ . What is the value of  $V$ , when  $\ell = 12$ ,  $w = 8$ , and  $h = 3$ ?

- (1) 23                          (3) 132  
(2) 99                          (4) 288

- 40** What are the coordinates of point A in the graph below?



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

- 41** Which number is a square root of 16?

- (1) 8                              (3) 256  
(2) 32                              (4) 4

**42** Subtract:

$$\begin{array}{r} 8\frac{3}{4} \\ - 2\frac{1}{8} \\ \hline \end{array}$$

- (1)  $10\frac{7}{8}$                       (3)  $6\frac{5}{8}$   
(2)  $6\frac{7}{8}$                       (4)  $6\frac{1}{2}$

<p><b>43</b> Subtract 3.2 from 47.</p> <p>(1) 1.5                      (3) 43.8 (2) 15                        (4) 44.2</p>	<p><b>48</b> Which is <i>not</i> a prime number?</p> <p>(1) 5                              (3) 3 (2) 9                              (4) 23</p>
<p><b>44</b> If the sales tax rate is 8%, what is the total cost of a shirt priced at \$12?</p> <p>(1) \$0.96                      (3) \$12.08 (2) \$11.04                      (4) \$12.96</p>	<p><b>49</b> When 36.95 is divided by 100, the quotient is</p> <p>(1) 0.03695                      (3) 3.695 (2) 0.3695                        (4) 3695</p>
<p><b>45</b> Tanya started to babysit at 9:30 a.m. and finished at 3:00 p.m. What is the total number of hours Tanya babysat?</p> <p>(1) <math>5\frac{1}{2}</math>                        (3) <math>3\frac{1}{2}</math> (2) <math>6\frac{1}{2}</math>                        (4) <math>12\frac{1}{2}</math></p>	<p><b>50</b> One angle of a triangle measures <math>65^\circ</math> and a second angle measures <math>45^\circ</math>. The third angle of the triangle measures</p> <p>(1) <math>250^\circ</math>                        (3) <math>70^\circ</math> (2) <math>80^\circ</math>                        (4) <math>20^\circ</math></p>
<p><b>46</b> The total cost of 3 cans of soup is 89¢. What is the total cost of 12 cans?</p> <p>(1) \$2.67                        (3) \$3.89 (2) \$3.56                        (4) \$10.68</p>	<p><b>51</b> During the basketball season, Larry made 120 foul shots out of 150 attempts. What percent of his foul shots did he make?</p> <p>(1) 30%                              (3) 125% (2) 80%                              (4) 270%</p>
<p><b>47</b> Rico receives a 2% commission for each car he sells. He sold a car for \$14,000. What is his commission?</p> <p>(1) \$28,000                        (3) \$2,800 (2) \$14,002                        (4) \$280</p>	<p><b>52</b> Which decimal is equivalent to 3%?</p> <p>(1) 0.003                              (3) 3.0 (2) 0.03                              (4) 0.3</p>

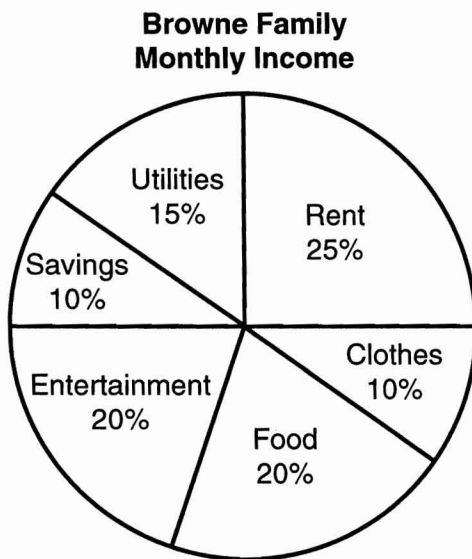
53 What is the prime factorization of 36?

- (1)  $2 \times 2 \times 3 \times 3$     (3)  $6 \times 6$   
(2)  $2 \times 3 \times 6$     (4)  $4 \times 9$

54 Which number is *not* divisible by 3?

- (1) 537    (3) 989  
(2) 612    (4) 1014

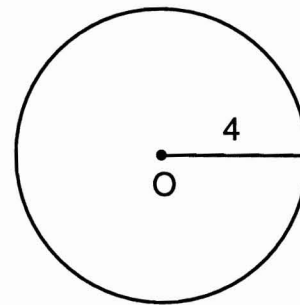
55 The circle graph below shows how the Brownes spend their monthly income.



If they spend \$900 for rent, what is their total monthly income?

- (1) \$225    (3) \$3,600  
(2) \$2,700    (4) \$22,500

56 What is the area, in terms of  $\pi$ , of the circle below?

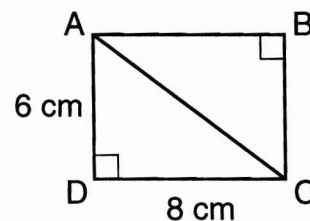


- (1)  $16\pi$     (3)  $8\pi$   
(2)  $2\pi$     (4)  $4\pi$

57 Which measurement is equivalent to 400 centimeters?

- (1) 40 mm    (3) 4 km  
(2) 40 cm    (4) 4 m

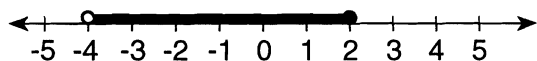
58 The rectangle shown below has a length of 8 centimeters and a width of 6 centimeters.



What is the measure of diagonal AC?

- (1) 14 cm    (3) 8 cm  
(2) 10 cm    (4) 6 cm

**59** Which inequality is represented by the graph below?



- |                        |                     |
|------------------------|---------------------|
| (1) $-4 \leq x \leq 2$ | (3) $-4 \leq x < 2$ |
| (2) $-4 < x \leq 2$    | (4) $-4 < x < 2$    |

**60** The sum of  $\frac{2}{3}$  and  $\frac{3}{4}$  is

- |                    |                     |
|--------------------|---------------------|
| (1) $\frac{5}{7}$  | (3) $\frac{17}{12}$ |
| (2) $\frac{5}{12}$ | (4) $\frac{7}{6}$   |