PRETEST

Part 1

Number Operations, Data Analysis, Statistics, and Probability

Directions: Solve each problem.

1. For the numbers 683 and 2329, round each number to the nearest hundred. Then find the product of the rounded numbers.

2. Round 46.3795 to the nearest hundredth.

3. $10\frac{1}{3}$ is how much more than $7\frac{8}{9}$?

4. Find 40% of 65.

5. 21 is what percent of 28?

6. Find the interest on $4000 at 3.5% annual interest for 1 year 6 months.

7. Sanford bought two shirts for $24.95 each and a pair of pants for $39.95. He paid with a $100 bill. Assuming he paid no sales tax, how much change did he receive?

8. Maureen drove for 1.5 hours at an average speed of 62 mph and then for another half hour at an average speed of 24 mph. How far did she drive altogether?

9. What is the value of 120^2?

10. The budget for Milltown was $3.55 million in 1990. In 1995 the budget was $4.15 million, and in 2000 the budget was $5.3 million. By how much did the budget increase from 1995 to 2000?

11. Express the ratio of 56 to 84 in simplest form.

12. For every $2 that Tom saves, he spends $18. Write the ratio of the amount Tom spends to the amount Tom makes.

Choose the correct answer to each problem.

13. In the number 18,465,000, what is the value of the digit 4?

    (1) 400
    (2) 4,000
    (3) 40,000
    (4) 400,000
    (5) 4,000,000

14. Which of the following is the approximate quotient of $5658 \div 82$?

    (1) 7
    (2) 70
    (3) 140
    (4) 700
    (5) 1400

15. Which of the following is the same as $8(9 + 2)$?

    (1) $8 \times 9 + 8$
    (2) $8 \times 9 + 2$
    (3) $8 \times 9 + 8 \times 2$
    (4) $9(8 + 2)$
    (5) $2(8 + 9)$

PRETEST

16. Arlette makes \$2467 each month. Which expression represents her yearly income?

(1) 4(\$2467)

(2) 12(\$2467)

(3) $\frac{\$2467}{12}$

(4) $\frac{\$2467}{4}$

(5) $\frac{12}{\$2467}$

17. Tom wants to strip and repaint all 16 windows in his house. So far he has refinished 12 of the windows. Which of the following does *not* represent the part of the entire job that he has completed?

(1) 0.75

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

(3) $\frac{12}{100}$

(4) 75%

(5) $\frac{12}{16}$

18. Michiko drove 364 miles in $7\frac{1}{2}$ hours. Which expression represents her average driving speed in miles per hour?

(1) 7.5(364)

(2) $\frac{7.5}{364}$

(3) 2(364 + 7.5)

(4) $\frac{364 + 7.5}{2}$

(5) $\frac{364}{7.5}$

19. The answer to $\sqrt{5184}$ is between which of the following pairs of numbers?

(1) 40 and 50
(2) 50 and 60
(3) 60 and 70
(4) 70 and 80
(5) 80 and 90

20. On Friday 235 people attended a performance at the Community Playhouse. On Saturday 260 people attended the performance. Everyone paid \$12 for a ticket. Which expression represents the total receipts, in dollars, for the two performances?

(1) $\frac{235 + 260}{12}$

(2) 12(235 + 260)

(3) 12(235) + 260

(4) 235 + 12(260)

(5) 12 × 235 × 260

21. The Simpsons paid \$212.95 for 100 gallons of heating oil. To the nearest cent, what was the price per gallon of the heating oil?

(1) \$2.95
(2) \$2.19
(3) \$2.15
(4) \$2.13
(5) \$2.10

PRETEST

22. Which expression is equal to the product of $\frac{1}{3}$ and $2\frac{1}{4}$?

(1) $\frac{1}{3} \times \frac{4}{9}$
(2) $\frac{3}{1} \times \frac{4}{9}$
(3) $\frac{1}{3} \times \frac{9}{4}$
(4) $\frac{1}{3} \times \frac{1}{4}$
(5) $\frac{3}{1} \times \frac{9}{4}$

23. Scientists estimate that the temperature at the core of the sun is 27,000,000°F. Which of the following represents the Fahrenheit temperature in scientific notation?

(1) 2.7×10^4
(2) 2.7×10^5
(3) 2.7×10^6
(4) 2.7×10^7
(5) 2.7×10^8

24. From a 2-pound bag of flour, Marcella took $\frac{1}{4}$ pound to bake bread. Which expression tells the weight of the flour left in the bag?

(1) $2 - 0.25$
(2) $2 - 1.4$
(3) $2 - 0.14$
(4) $2 - 0.025$
(5) $2.5 - 2$

Problems 25 and 26 refer to the following information.

For every dollar spent on summer youth programs in Milltown, 80 cents goes directly to program services. The rest of the budget is spent on staff salaries.

25. What is the ratio of the amount spent on staff salaries to the total budget for the youth programs?

(1) 1:10
(2) 1:8
(3) 1:5
(4) 1:4
(5) 1:2

26. The budget for the summer soccer program in Milltown is $20,000. How much is spent on staff salaries?

(1) $10,000
(2) $ 8,000
(3) $ 5,000
(4) $ 4,000
(5) $ 2,000

27. The table lists the selling prices of four houses on Elm Street. What is the mean selling price of the houses?

12 Elm Street	$ 93,000
17 Elm Street	$ 98,000
23 Elm Street	$105,000
36 Elm Street	$128,000

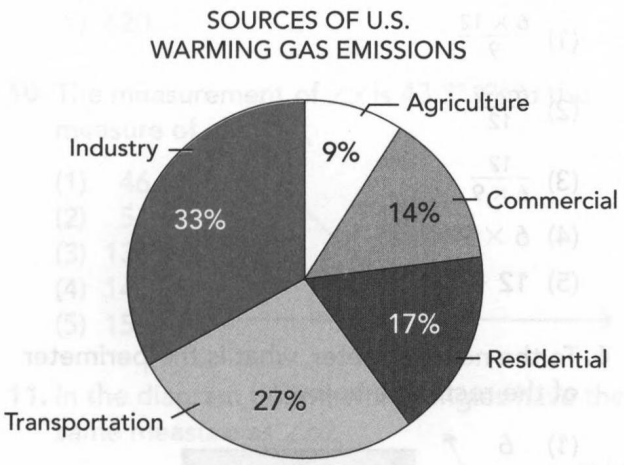
(1) $ 93,000
(2) $ 99,000
(3) $103,500
(4) $106,000
(5) $128,000

PRETEST

28. A countywide Little League sold 2000 raffle tickets for a new car. Members of the Milltown Little League sold 125 of the raffle tickets. What is the probability that the winning ticket was sold by a member of the Milltown Little League?

(1) $\frac{1}{6}$
(2) $\frac{1}{8}$
(3) $\frac{1}{10}$
(4) $\frac{1}{12}$
(5) $\frac{1}{16}$

Problems 29 and 30 refer to the graph below.



Source: Environmental Protection Agency

29. According to the graph, industry and transportation together produce what fraction of warming gas emissions?

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

30. For every pound of warming gas produced by agriculture, how many pounds of warming gas are produced by transportation?

(1) 1.0
(2) 1.3
(3) 2.0
(4) 2.7
(5) 3.0

Answers are on page 10.

PRETEST

Pretest Answer Grid, Part 2

1	_____	5	①	②	③	④	⑤	11	①	②	③	④	⑤
2	_____	6	①	②	③	④	⑤	12	①	②	③	④	⑤
3	_____	7	①	②	③	④	⑤	13	①	②	③	④	⑤
4	_____	8	①	②	③	④	⑤	14	①	②	③	④	⑤
		9	①	②	③	④	⑤	15	①	②	③	④	⑤
		10	①	②	③	④	⑤	16	①	②	③	④	⑤

PART 2

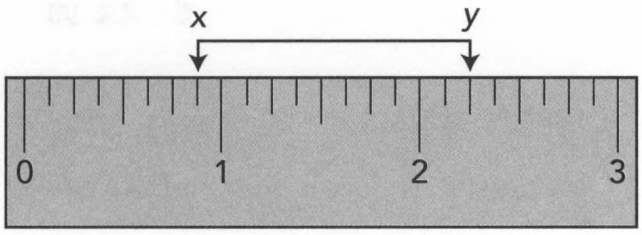
Measurement and Geometry

Directions: Solve each problem.

1. A meeting room is 50 feet wide. What is the width of the room in yards?

2. Eight kilograms are equal to how many grams?

3. What is the length, in inches, of the line between points *x* and *y* on the ruler?



4. At an average driving speed of 60 mph, how far can Marta drive in 2 hours 15 minutes?

Choose the correct answer to each problem.

5. Which expression represents the length, in feet, of 6 bricks, each 9 inches long, laid end to end?

(1) $\frac{6 \times 12}{9}$

(2) $\frac{6 \times 9}{12}$

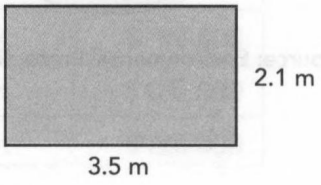
(3) $\frac{12}{6 \times 9}$

(4) $6 \times 9 \times 12$

(5) $12 + 6 \times 9$

6. To the nearest meter, what is the perimeter of the rectangle below?

(1) 6
(2) 7
(3) 9
(4) 11
(5) 12



7. What is the volume, in cubic inches, of a rectangular box that is 1 foot long, 8 inches wide, and 5 inches high?

(1) 80
(2) 120
(3) 240
(4) 360
(5) 480

PRETEST

8. Which expression represents the area of the shaded part of the figure below?

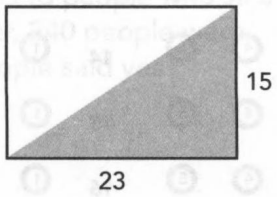
(1) $\frac{23 \times 15}{2}$

(2) $2(23) + 2(15)$

(3) 23×15

(4) $23^2 + 15^2$

(5) $2(23 + 15)$

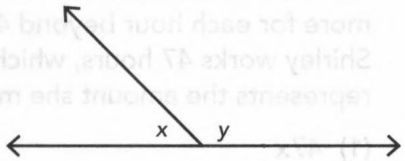


9. A circular reflecting pool has a radius of 10 meters. Rounded to the nearest 10 square meters, what is the surface area of the bottom of the pool?

(1) 30
(2) 60
(3) 260
(4) 310
(5) 620

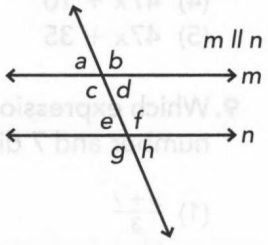
10. The measurement of $\angle x$ is 43.5°. Find the measure of $\angle y$.

(1) 46.5°
(2) 56.5°
(3) 136.5°
(4) 146.5°
(5) 156.5°



11. In the diagram below, which angles have the same measure as $\angle b$?

(1) $\angle a$, $\angle d$, $\angle e$, and $\angle h$
(2) $\angle c$, $\angle f$, and $\angle g$
(3) $\angle c$, $\angle e$, and $\angle h$
(4) only $\angle c$
(5) only $\angle f$

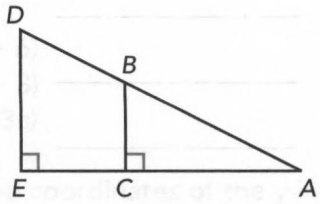


12. In isosceles triangle ABC, vertex angle $B = 94°$. What is the measure of each base angle of the triangle?

(1) 43°
(2) 86°
(3) 94°
(4) 96°
(5) 137°

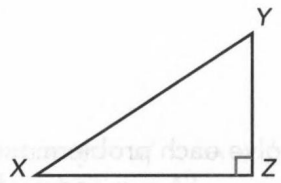
13. In the diagram below, $BC = 3$, $AC = 7$, and $DE = 5$. Find AE.

(1) 8
(2) $9\frac{1}{3}$
(3) 10
(4) $11\frac{2}{3}$
(5) 13



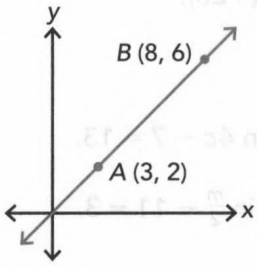
14. In the triangle below, $XZ = 16$ and $YZ = 12$. Find XY.

(1) 14
(2) 18
(3) 20
(4) 22
(5) 24



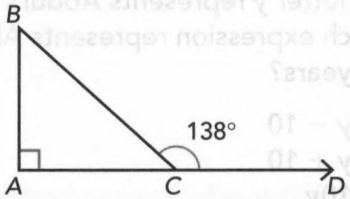
15. What is the slope of the line that passes through points A and B?

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



16. What is the measure of $\angle ABC$ in the diagram below?

(1) 42°
(2) 48°
(3) 52°
(4) 58°
(5) 62°



Answers are on page 11.

PRETEST

Pretest Answer Grid, Part 3

1 _____

2 _____

3 _____

4 _____

5 _____

6	①	②	③	④	⑤	12	①	②	③	④	⑤
7	①	②	③	④	⑤	13	①	②	③	④	⑤
8	①	②	③	④	⑤	14	①	②	③	④	⑤
9	①	②	③	④	⑤	15	①	②	③	④	⑤
10	①	②	③	④	⑤	16	①	②	③	④	⑤
11	①	②	③	④	⑤						

PART 3

Algebra

Directions: Solve each problem.

1. Simplify $-9 - 3$.

2. Simplify $-8(+20)$.

3. Simplify $\frac{-6}{-8}$.

4. Solve for c in $4c - 7 = 13$.

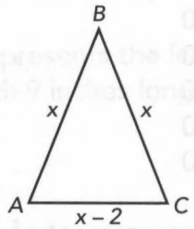
5. Solve for m in $\frac{m}{2} - 11 = 3$.

Choose the correct answer to each problem.

6. The letter y represents Abdul's age now. Which expression represents Abdul's age in ten years?

   (1) $y - 10$
   (2) $y + 10$
   (3) $10y$
   (4) $10 - y$
   (5) $\frac{y}{10}$

7. Which expression represents the perimeter of triangle ABC?



   (1) $3x - 2$
   (2) $3x + 2$
   (3) $2x + 2$
   (4) $3x - 6$
   (5) $2x - 3$

8. Shirley makes x dollars per hour for the first 40 hours of her workweek. She makes $5 more for each hour beyond 40 hours. If Shirley works 47 hours, which expression represents the amount she makes in a week?

   (1) $47x$
   (2) $45x + 5$
   (3) $45x + 10$
   (4) $47x + 10$
   (5) $47x + 35$

9. Which expression represents the sum of a number and 7 divided by 3?

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

PRETEST

10. In a recent poll, registered voters were asked whether they would approve of a tax increase to build a new firehouse. The ratio of people who said yes to people who said no was 5:3. Altogether, 240 people were polled. How many people said yes?

(1) 180
(2) 150
(3) 120
(4) 90
(5) 60

11. A rectangle has a perimeter of 56 inches. The length is 4 inches greater than the width. Find the width of the rectangle in inches.

(1) 8
(2) 12
(3) 14
(4) 16
(5) 20

12. Which of the following is equal to $\sqrt{200}$?

(1) 50
(2) 100
(3) $10\sqrt{2}$
(4) $2\sqrt{10}$
(5) $20\sqrt{5}$

13. Which of the following is *not* a solution to $7a - 2 < 4a + 13$?

(1) $a = -4$
(2) $a = -3$
(3) $a = -2$
(4) $a = 4$
(5) $a = 6$

14. Which of the following is equal to the expression $4cd - 6c$?

(1) $4c(d - 6c)$
(2) $2c(d - 3)$
(3) $2c(2d - 6)$
(4) $2c(2d - 3)$
(5) $4c(d - 3c)$

15. What are the coordinates of the *y*-intercept if $y = 8x + 9$?

(1) (9, 0)
(2) (0, 9)
(3) (−9, 0)
(4) (0, −9)
(5) (9, 9)

16. For the equation $y = x^2 - 5x + 6$, what is the value of y when $x = 4$?

(1) 20
(2) 16
(3) 8
(4) 6
(5) 2

Answers are on page 11.