

Student Name: _

Ohio Achievement Tests



Mathematics Student Test Booklet March 2006

This test was originally administered to students in March 2006.

Not all items from the March 2006 administration will be released in this document. According to Ohio Revised Code (ORC) 3301.07.11: 4(b) . . . not less than forty percent of the questions on the test that are used to compute a student's score shall be a public record. The department (of education) shall determine which questions will be needed for reuse on a future test and those questions shall not be public records and shall be redacted from the test prior to its release as a public record.

This publicly released material is appropriate for use by Ohio teachers in instructional settings. This test is aligned with Ohio's Academic Content Standards for Mathematics.

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Directions:

Today you will be taking the Ohio Grade 7 Mathematics Achievement Test. Three different types of questions appear on this test: multiple choice, short answer and extended response.

There are several important things to remember:

- 1. Read each question carefully. Think about what is being asked. Look carefully at graphs or diagrams because they will help you understand the question.
- 2. You may use the blank areas of your Student Test Booklet to solve problems. You may also use the optional grid paper in the answer document to solve problems.
- 3. For short-answer and extended-response questions, use a pencil to write your answers neatly and clearly in the gridded space provided in the answer document. Any answers you write in the Student Test Booklet will not be scored.
- 4. Short-answer questions are worth two points. Extended-response questions are worth four points. Point values are printed near each question in your Student Test Booklet. The amount of gridded space provided for your answer is the same for all two- and four-point questions.
- 5. For multiple-choice questions, shade in the circle next to your choice in the answer document for the test question. Mark only one choice for each question. Darken completely the circles on the answer document. If you change an answer, make sure that you erase your old answer completely.
- 6. Do not spend too much time on one question. Go on to the next question and return to the question skipped after answering the remaining questions.
- 7. Check over your work when you are finished.

Item 1 has not been slated for public release in 2006.

28

2. Coral was asked to draw a rhombus on the chalkboard.

Coral drew a square.

Mathematics

Ken told Coral that she didn't draw a rhombus.

Coral responded, "A square is a rhombus."

Which statement supports Coral's reasoning that a square is a rhombus?

- A. A rhombus must have at least four sides.
- B. A rhombus must have one pair of parallel sides.
- C. A rhombus must have right angles.
- D. A rhombus must have four congruent sides.

Item 3 has not been slated for public release in 2006.

4. Manny surveyed 24 of his classmates about their vacation plans. The bar graph shows the results.



Manny's class is representative of the entire school. What is a reasonable estimate for how many of the 300 students in the school have no vacation plans?

- A. 50 students
- B. 75 students
- C. 100 students
- D. 125 students

Items 5-6 have not been slated for public release in 2006.



7. Colby graphed some data as shown in this box-and-whisker plot.



Which statement is true about Colby's data?

- A. The range of the data is 25.
- B. One-half of the data are below 65.
- C. The median of the data is 60.
- D. Three-fourths of the data are below 90.

Item 8 has not been slated for public release in 2006.

31

Mathematics





Mathematics

 A shipping company uses a formula to determine the cost for shipping a package:

c = 2.79 + 0.38p,

where c is the cost of shipping and p is the number of pounds.

What is the cost of shipping a package that weighs 8 pounds?

- A. \$2.79
- B. \$3.04
- C. \$5.21
- D. \$5.83

On the March 2006 Grade 7 Mathematics Achievement Test, items 10-15 are field-test items, which are not released.



Items 16-17 have not been slated for public release in 2006.

- 18. Simplify: $3x^2 + 3x x^2 + 5 + 5x$
 - A. $3x^2 + 8x + 5$
 - B. $10x^2 + 5$
 - C. 15*x*⁶
 - D. $2x^2 + 8x + 5$



Item 19 has not been slated for public release in 2006.

37

20. A figure is shown.



Which degree of rotational symmetry does this figure have?

- A. 90°
- B. 120°
- C. 180°
- D. 270°

Item 21 has not been slated for public release in 2006.

22. The Burton Company produces cylindrical barrels.

If the height of a cylindrical barrel is reduced from 12 feet to 4 feet, what will happen to the volume of the barrel?

- A. The volume triples.
- B. The volume doubles.
- C. The volume is reduced to one half of the original.
- D. The volume is reduced to one third of the original.



Items 23-24 have not been slated for public release in 2006.



Mathematics

An airline has 400 flights a day. Of these, 80% 25.

depart before 6 p.m. Flights leaving before

6 p.m. depart on schedule $\frac{3}{4}$ of the time.

How many flights leaving before 6 p.m. depart on schedule each day?

- A. 155
- 240 Β.
- C. 300
- D. 320
- 26. Two circles are shown.



In your Answer Document, find the ratio of the circumference of Circle A to the circumference of Circle B. Show your work or provide an explanation to support your answer.

For question 26, respond completely in your **Answer** Document. (2 points)

Item 27 has not been slated for public release in 2006.



28. Find the value of the expression:

0.4 +	<u>2(1.1 - 0.6)</u> 0.5

- A. 2.4
- B. 2.8
- C. 3.6
- D. 5.4

Item 29 has not been slated for public release in 2006.

41

30. An angle is shown on this protractor.



Estimate the measure of the angle to the nearest degree.

- A. 23°
- B. 26°
- C. 27°
- D. 37°

Mathematics

Items 31-32 have not been slated for public release in 2006.



Mathematics

33. Triangle *LMN* is shown on the graph.



Triangle *LMN* is translated three units to the right and two units down. What are the coordinates of the vertices for triangle L'M'N'?

- A. L'(-3, 1), M'(3, 4), N'(5, 1)
- B. L'(-4, 1), M'(5, 1), N'(2, 4)
- C. L'(5, 1), M'(3, 1), N'(2, 4)
- D. L'(4, 3), M'(1, 5), N'(1, -3)

Items 34-35 have not been slated for public release in 2006.

44

36. After a game, Coach Larson wants to serve punch to the players on her soccer team. She will mix 1 quart of ginger ale and 1 gallon of fruit punch together.

In your **Answer Document**, find the number of 8-ounce servings she can make. Show how you found the answer. For question 36, respond completely in your **Answer Document**. (2 points)



Item 37 has not been slated for public release in 2006.

- 38. Which graph represents $-2 \le x \le 2$?
 - A. -5 -4 -3 -2 -1 0 1 2 3 4 5
 - B. -5 -4 -3 -2 -1 0 1 2 3 4 5



39. Josh's test scores were 95, 89, 87, 95, 86, and 88.

Which measure of center will give Josh the highest final grade?

- A. mean
- B. median
- C. mode
- D. All three are the same.
- 40. Rani has determined that 10 beans weigh 0.25 ounces.

About how many beans are there in a bag that weighs 12 ounces?

- A. 48
- B. 120
- C. 400
- D. 480
- 41. A spinner and a number cube are used to play a game.

The sides of the cube are numbered 1 through 6. A player's score is the sum of the numbers on which the spinner lands and the number rolled on the cube.

For question 41, respond completely in your **Answer Document**. (2 points)



In your **Answer Document**, find the probability of getting a sum greater than 25. Show your work or provide an explanation to support your answer.

Item 42 has not been slated for public release in 2006.

47

- 43. Which statement is always true about the sum of a negative integer and a positive integer?
 - A. The sum is zero.
 - B. The sum is positive.
 - C. The sum is negative.
 - D. The sum can be positive, negative or zero.

Go to next page

Mathematics

44. A circle is cut out of a square as shown.



What is the approximate area of the shaded portion of the figure?

- A. 22 square feet
- B. 37 square feet
- C. 69 square feet
- D. 85 square feet





Item 45 has not been slated for public release in 2006.

