

Student Name \_\_\_\_\_

# Ohio Achievement Tests



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label in space below.  
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## Mathematics

Student Test Booklet

May 2007

*This test was originally administered to students in May 2007.*

*Not all items from the May 2007 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 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.*

The Ohio Department of Education does not discriminate on the basis of race, color, national origin, sex, religion, age, or disability in employment or the provision of services.

**Directions:**

Today you will be taking the Ohio Grade 4 Mathematics Achievement Test. This is a test to see how well you understand mathematics. This test consists of questions about numbers, measurement, shapes, graphs, and patterns. 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 help you understand the question.
2. You may use the blank areas of your Student Test Booklet to solve problems.
3. When you write your answers, write them neatly and clearly in the space provided using a pencil.
4. When you are asked to select the answer, make sure you fill in the circle next to the answer choice. Mark only one answer for each question.
5. If you do not know the answer to the question, skip it and go on. If you have time at the end of the test, go back to the questions you skipped and answer them before you hand in your Student Test Booklet.
6. If you finish the test early, you should check over your work. When you are finished and your Student Test Booklet has been collected, you should take out your silent work.
7. When you finish the test, you may not go on to, or look at the writing section of the Student Test Booklet.

# M

## Mathematics

Use Pencil Please

Directions: Carefully read each question. Fill in the circle next to the correct answer.

Items 1–3 have not been slated for public release in 2007.

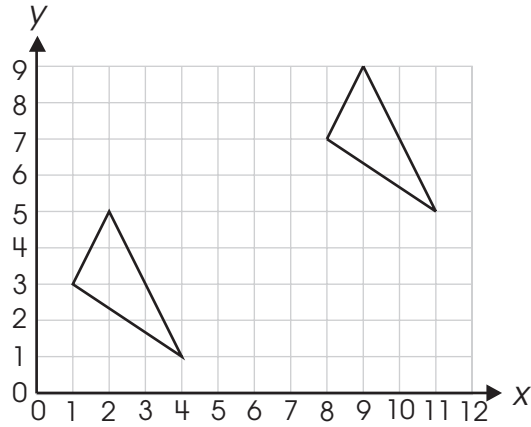


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4. What unit of measurement is likely to be used to find the length of a border around a bulletin board?
- A. inches
  - B. square feet
  - C. cubic yards
  - D. miles

# M

5. Two triangles are drawn on the grid.



Which transformation — reflection (flip), translation (slide) or rotation (turn) — can Bill use to determine whether the two triangles are congruent? \_\_\_\_\_

Explain how this transformation shows Bill that the two triangles are congruent.

6. Aaron saved \$60 to buy airplane models for his collection. The cost of each model with tax included is \$7.

How many models can he buy?

- A. 4
- B. 8
- C. 9
- D. 12

Item 7 has not been slated for public release in 2007.



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8. Fred recorded the heights, in inches, of the students in his class. The range of the data was 15.

Which statement is true about Fred's data?

- A. Fred found that 15 students are all the same height.
  - B. The height of the shortest student is 15 inches.
  - C. Fred recorded the heights of 15 students in his class.
  - D. The tallest student is 15 inches taller than the shortest student.
9. Roy drew a triangle with exactly two congruent angles and two congruent sides.

What kind of triangle did Roy draw?

- A. equiangular
- B. equilateral
- C. isosceles
- D. scalene



10. Eight students are shown.



Write a fraction and a decimal that represents the number of students wearing hats.



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## Mathematics

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Items 11–14 have not been slated for public release in 2007.



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15. Raymond has these notebooks and pens in his backpack.

### Raymond's Backpack

Notebook	Pens
Science	blue
Reading	green
Writing	red

List all the possible combinations of one notebook and one pen that Raymond could take from his backpack.

16. The numbers of students in four classes are shown in the table.

**Number of Students in Each Class**

Class	Number of Students
Mr. Willard	19
Ms. Smith	23
Ms. Rose	27
Mr. Hiller	29

Which class can be divided into equal-sized groups that contain more than one student?

- A. Mr. Willard's class
- B. Ms. Smith's class
- C. Ms. Rose's class
- D. Mr. Hiller's class

Item 17 has not been slated for public release in 2007.

18. Which unit is appropriate for measuring the area of the bottom of a pan?
- A. inch
  - B. foot
  - C. square inch
  - D. cubic foot



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Item 19 has not been slated for public release in 2007.

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## Mathematics

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20. Anthony's family plants 15 trees each weekend.

Construct a table showing the total number of trees Anthony's family planted after 1, 2, 3, 4, and 5 weekends.

Describe the pattern that tells the number of trees that the family has planted.



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If  $t$  is the total number of trees planted and  $w$  is the number of weeks, write an expression for the total number of trees,  $t$ , that are planted after  $w$  weeks.

If the pattern continues, how many trees will have been planted after 9 weeks? \_\_\_\_\_

Show or explain how you found your answer.



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## Mathematics

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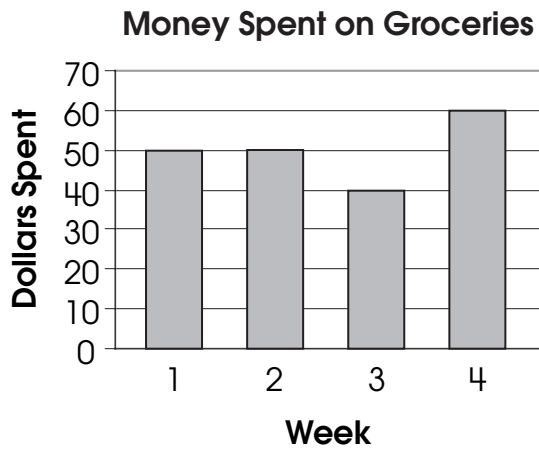
On the May 2007 Grade 4 Mathematics Achievement Test, items 21–26 are field-test items, which are not released.



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Item 27 has not been slated for public release in 2007.

28. Ken goes grocery shopping once a week and keeps track of how much money he spends. He made a bar graph and a line plot to display these data.



What information can be found only on the bar graph?

- A. the number of weeks he shopped
- B. the week he spent the least money
- C. the most money he spent in one week
- D. the least money he spent in one week

Item 29 has not been slated for public release in 2007.

30. Robin measured the length of a piece of rope and found it to be 12 feet long.

What would happen to the number of units if Robin measured the length of the rope in yards instead of feet?

- A. There would be no units.
- B. There would be more units.
- C. There would be fewer units.
- D. There would be the same number of units.

31. Erik walked Mrs. Johnson's dog each day for six days. He earned \$1.25 each day.

How much money did Erik earn?

- A. \$4.75
- B. \$6.25
- C. \$7.25
- D. \$7.50

Items 32–33 have not been slated for public release in 2007.

# M

## Mathematics

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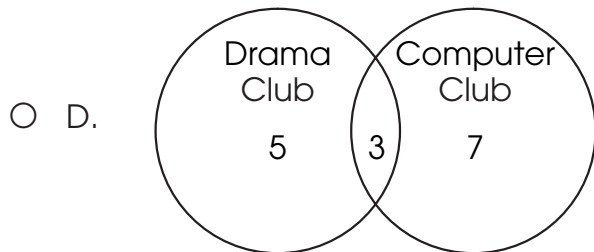
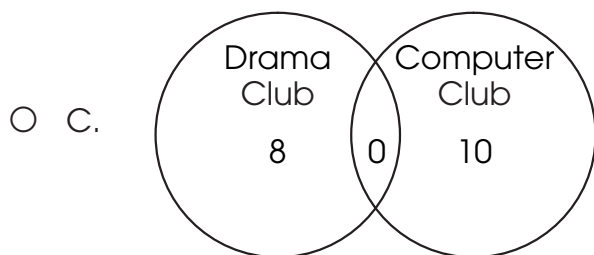
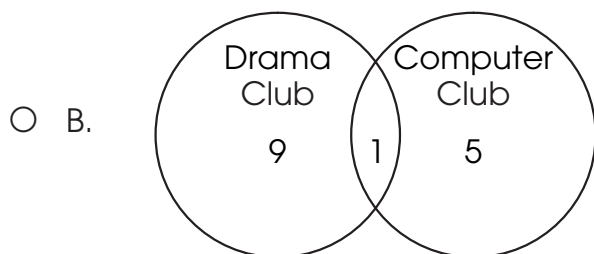
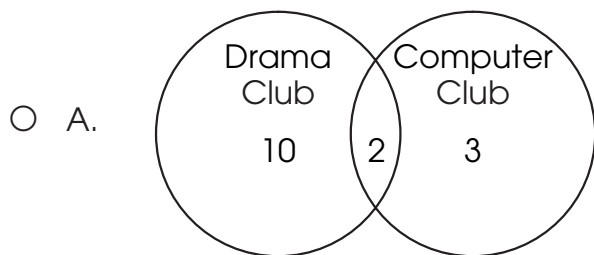
34. How are a rhombus and a square alike?
- A. They both have four equal sides.
  - B. They both have four right angles.
  - C. They both have four equal angles.
  - D. They both have only one pair of parallel sides.



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35. Mrs. Allen has 15 students. Eight students belong to the drama club and 10 students belong to the computer club. Some students belong to both clubs.

Which Venn diagram represents these data?



36. There are about 525,600 minutes in a year.

What is this number rounded to the nearest thousand?

- A. 500,000
- B. 525,000
- C. 526,000
- D. 530,000

37. Scott added seven to a number, and the answer was less than 12.

Which inequality represents this situation?

- A.  $12 - 7 < \boxed{?}$
- B.  $\boxed{?} + 12 < 7$
- C.  $\boxed{?} - 7 < 12$
- D.  $\boxed{?} + 7 < 12$



Items 38–39 have not been slated for public release in 2007.



40. Calvin gathered data on the number of people who live in five cities.

City	Number of People
St. James	109,026
Olivia	20,055
Franklin	111,402
Palmer	19,986
Trinity	109,000

Which city has more people than St. James?

- A. Olivia
- B. Franklin
- C. Palmer
- D. Trinity

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## Mathematics

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Items 41–44 have not been slated for public release in 2007.



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# M

## Mathematics

## Use Pencil Please

45. Matt recorded the total number of pennies he has saved at the end of each week in the table shown.

Week	Number of Pennies
1	3
2	?
3	12
4	?
5	48

Each week, Matt doubles the number of pennies he has saved. He forgot to record the total number of pennies in week 2 and week 4.



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Which completed table shows the correct number of pennies for weeks 2 and 4?

A.

Week	Number of Pennies
1	3
2	6
3	12
4	18
5	48

B.

Week	Number of Pennies
1	3
2	6
3	12
4	24
5	48

C.

Week	Number of Pennies
1	3
2	6
3	12
4	12
5	48

D.

Week	Number of Pennies
1	3
2	5
3	12
4	14
5	48

# M

## Mathematics

Use Pencil Please

46. There were 1,479 people at the movie theater on Saturday and 1,753 people on Sunday.

How many people went to the movie theater on Saturday and Sunday?

- A. 2,232
- B. 3,132
- C. 3,222
- D. 3,232



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