

Student Name: _____

Ohio Achievement Tests



Mathematics Student Test Booklet May 2009

This test was originally administered to students in May 2009.

Not all items from the May 2009 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.

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Directions:

Today you will be taking the Ohio Grade 5 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 answers 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. You may use a protractor on this test.
8. Check over your work when you are finished.
9. When you finish the test, you may not go on to, or back to, any other section of the Student Test Booklet.

Item 1 has not been slated for public release in 2009.



2. Two rectangular windows on the front of a store are congruent. One window measures 10 feet wide and 8 feet tall.

Which could be the measurements of the other window?

- A. 5 feet wide and 4 feet tall
- B. 10 feet wide and 8 feet tall
- C. 10 feet wide and 10 feet tall
- D. 20 feet wide and 16 feet tall

Items 3–5 have not been slated for public release
in 2009.

6. Which fraction is equivalent to $\frac{8}{12}$?

A. $\frac{1}{3}$

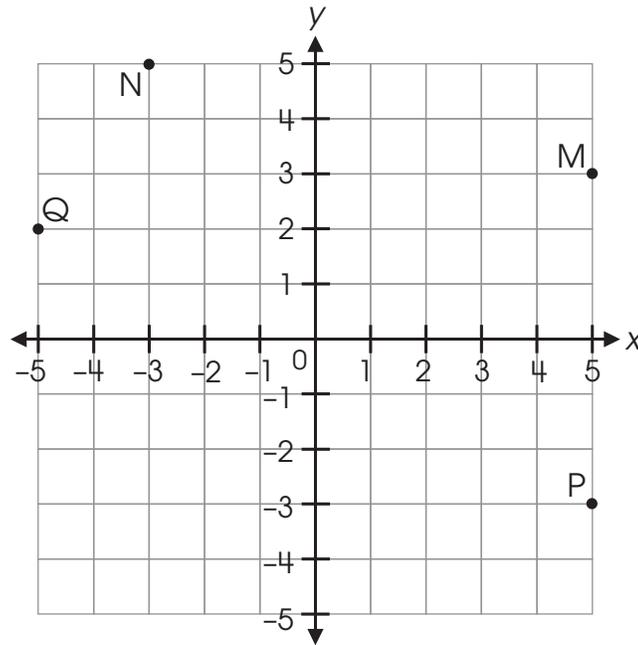
B. $\frac{1}{4}$

C. $\frac{2}{3}$

D. $\frac{3}{4}$



7. Four points are shown on a grid.



Which point is located at $(-3, 5)$?

- A. point M
- B. point N
- C. point P
- D. point Q

Item 8 has not been slated for public release in 2009.

9. Ms. Lin is making a display of 120 pictures. The display area can fit 10 pictures in each row. Ms. Lin can find the number of rows (r) she will need with this equation:

$$10 \times r = 120$$

Which equation could she also use to find the answer?

- A. $120 + 10 = r$
- B. $120 - 10 = r$
- C. $120 \times 10 = r$
- D. $120 \div 10 = r$

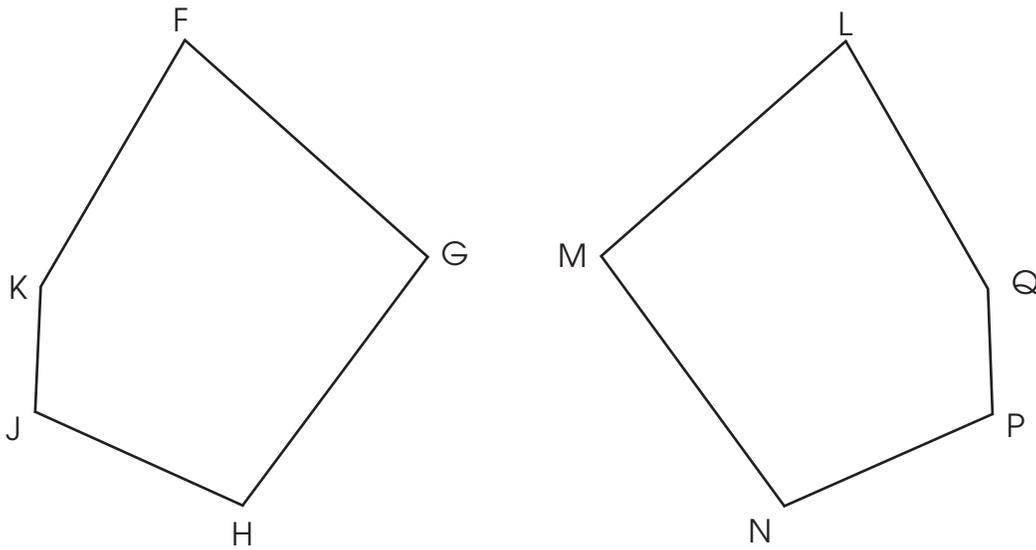


Item 10 has not been slated for public release in 2009.

M

Mathematics

11. Pentagon $FGHJK$ is congruent to pentagon $LMNPQ$.



Which statement must be true?

- A. $\angle H$ is congruent to $\angle L$
- B. \overline{FK} is congruent to \overline{MN}
- C. \overline{GH} is congruent to \overline{NP}
- D. $\angle G$ is congruent to $\angle M$

Item 12 has not been slated for public release in 2009.

13. Rachel flipped a coin 50 times and recorded the number of times it landed on tails. She recorded 28 tails.

Which statement describes the reasonableness of this result?

- A. It is reasonable because 28 is close to half of 50.
- B. It is reasonable because there will be more tails than heads.
- C. It is not reasonable because she will get 25 tails.
- D. It is not reasonable because she flipped the coin too many times.

14. Mary used tiles to make the pattern shown.



Figure 1



Figure 2



Figure 3



Figure 4

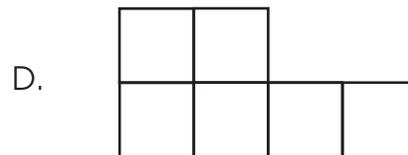
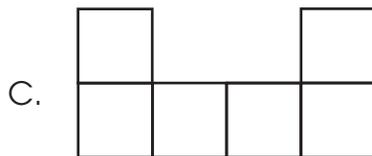
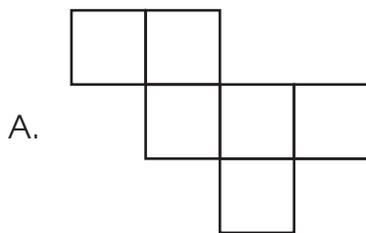
Which rule describes her pattern?

- A. Each figure has two more tiles than the previous figure.
- B. Each figure has four more tiles than the previous figure.
- C. Each figure has half the number of tiles as the previous figure.
- D. Each figure has double the number of tiles as the previous figure.



Item 15 has not been slated for public release in 2009.

16. Which net can be used to create a cube?



Items 17–18 have not been slated for public release in 2009.

On the May 2009 Grade 5 Mathematics Achievement Test, items 19–24 are field-test items, which are not released.



25. Morgan recorded the amount of time she spent reading and the number of pages she read each day.

Time (minutes)	Number of Pages
60	20
75	25
15	5
45	15

In your **Answer Document**, describe the relationship between the number of pages Morgan read each day and the amount of time she spent reading.

Morgan continues to read at the same rate. Determine the amount of time it will take her to read 30 pages. Show work or explain how you determined the amount of time it will take Morgan to read 30 pages. (2 points)

Items 26–28 have not been slated for public release
in 2009.

29. Two students added decimals.

Scott

$$\begin{array}{r} 3.54 \\ + 1.6 \\ \hline 3.70 \end{array}$$

Meg

$$\begin{array}{r} 3.54 \\ + 1.6 \\ \hline 5.14 \end{array}$$

In your **Answer Document**, use pictures, numbers or words to explain which student correctly added the decimals. (2 points)

M

Mathematics

30. Yoko marked off a playing field for a game.

Which could be a measure of the area of the playing field?

- A. 100 feet long
- B. 300 feet around
- C. 5,000 square feet
- D. 5,000 cubic feet



Items 31–32 have not been slated for public release
in 2009.

33. Monica has 3 red cards, 5 green cards and 4 blue cards in a box. She wants to add some yellow cards to her box. She also wants the probability of randomly picking any one of the four colors to be the same.

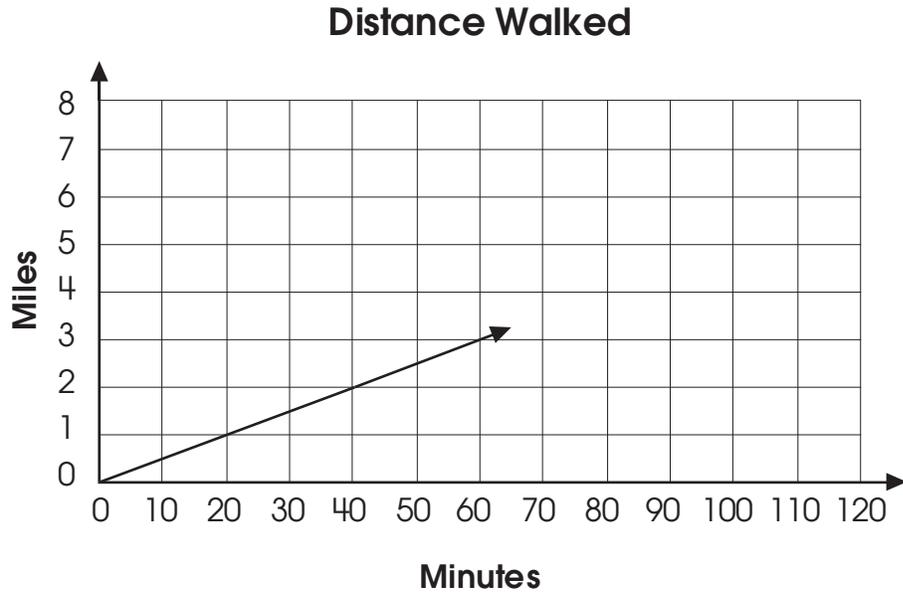
In your **Answer Document**, determine the number of cards of each color Monica will need to add so that the probability of picking a red, green, blue, or yellow card is the same. Explain how you determined the number of each color.

Then, state the probability of picking one of the colors. (4 points)

Items 34–35 have not been slated for public release
in 2009.



36. Mary recorded the number of miles she walked in 60 minutes, as shown in the graph.



The next day, Mary walked for 100 minutes at the same speed.

How many miles did she walk the next day?

- A. 4 miles
- B. 5 miles
- C. 6 miles
- D. 7 miles

M

Mathematics

37. The price of potatoes is \$0.59 per pound. The scale shows the weight of some potatoes.



Which is a reasonable estimate for the cost of the potatoes?

- A. about \$2
- B. about \$3
- C. about \$5
- D. about \$6

Items 38–39 have not been slated for public release
in 2009.

40. A recipe calls for $\frac{3}{4}$ cup of sugar. The cook has only $\frac{1}{3}$ cup of sugar.

How much sugar does the cook still need?

A. $\frac{2}{12}$ cup

B. $\frac{4}{12}$ cup

C. $\frac{5}{12}$ cup

D. $\frac{13}{12}$ cups

Item 41 has not been slated for public release in 2009.

42. Mr. Jefferson went to a book fair. Books cost \$3 each.

In your **Answer Document**, write an equation for the total cost (t) of buying any number of books (b) at the book fair.

Use your equation to find the total cost of buying 7 books at the book fair.
(2 points)



Item 43 has not been slated for public release in 2009.

44. There are five groups of students. Each group cuts out 20 blue stars and 25 red stars. The total number of stars the groups cut out is shown by this expression.

$$5 \times (20 + 25)$$

Which other expression represents the total number of stars?

- A. $(5 \times 20) + 25$
- B. $20 + (5 \times 25)$
- C. $(5 + 20) \times (5 + 25)$
- D. $(5 \times 20) + (5 \times 25)$



M

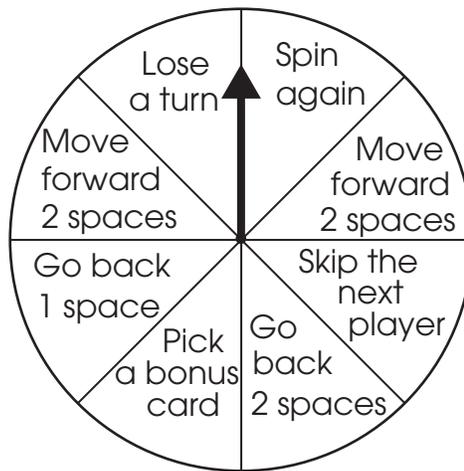
Mathematics

45. Julie packs 8 toys into a box. Each toy weighs 12 ounces.

How many pounds do the toys in the box weigh?

- A. 6 pounds
- B. 8 pounds 12 ounces
- C. 9 pounds 6 ounces
- D. 12 pounds

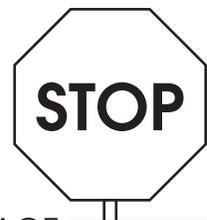
46. A board game uses the spinner shown.



During the game, Tyler will spin 40 times.

How many times can Tyler expect the spinner to land on "Lose a turn"?

- A. 1
- B. 5
- C. 8
- D. 20



M