

Student Name: _____

Ohio Achievement Tests



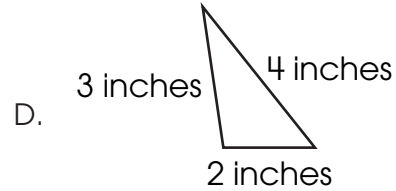
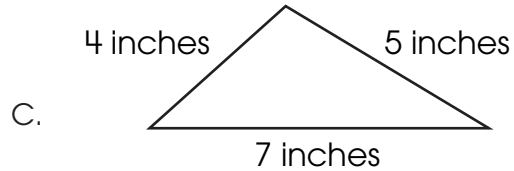
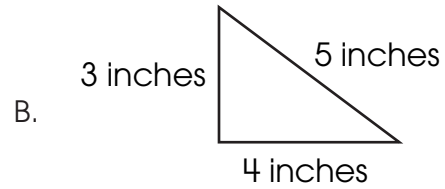
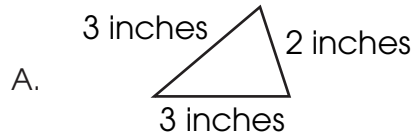
Mathematics Student Test Booklet May 2007

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.

1. Which triangle is isosceles?

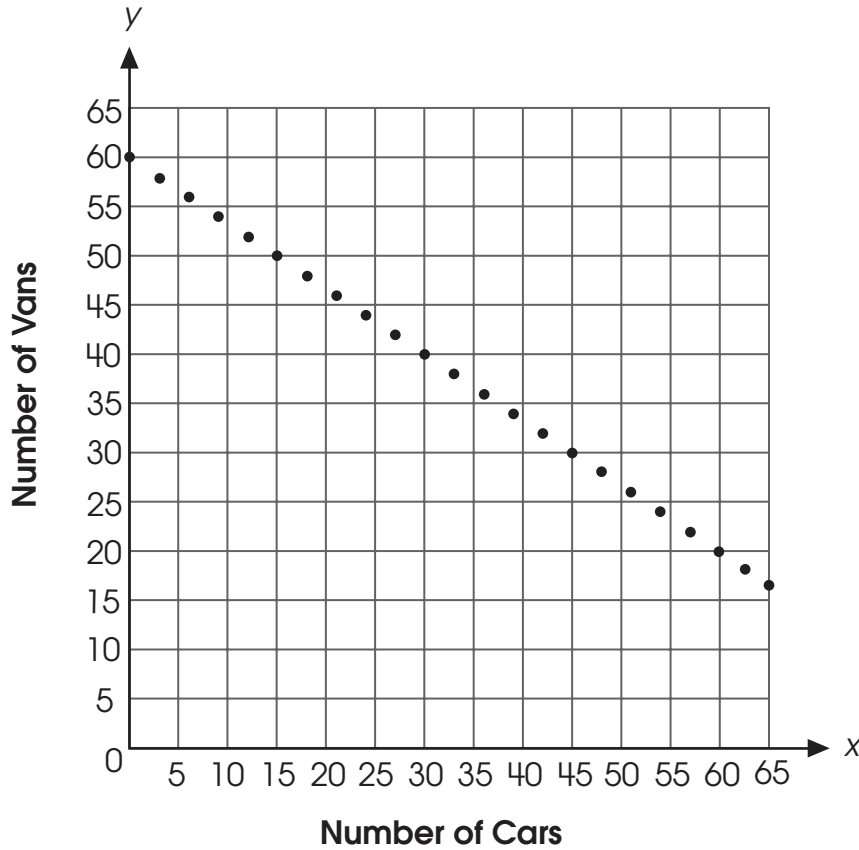


2. Which shows the meaning of 4^3 ?

- A. 4×3
- B. $4 \times 4 \times 4$
- C. $3 \times 3 \times 3 \times 3$
- D. $4 + 4 + 4$

3. The student council is holding a car wash. Council members are charging \$4 for cars and \$6 for vans.

The graph shows some possible combinations of cars and vans they could wash to reach their goal of \$360.



They washed 30 vans. How many cars did they need to wash to earn exactly \$360?

- A. 12
- B. 40
- C. 45
- D. 60

M

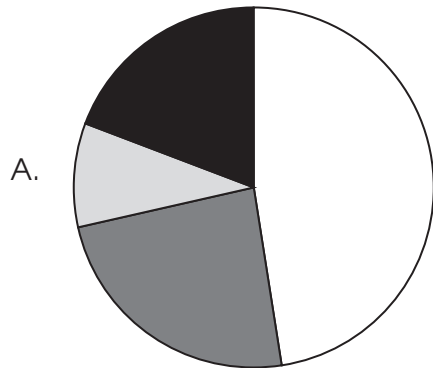
Mathematics

4. Tara surveyed the 25 students in her class to determine each student's favorite color. The results are shown.

Color	Number of Students
Blue	10
Green	5
Brown	2
Yellow	4
Other	4

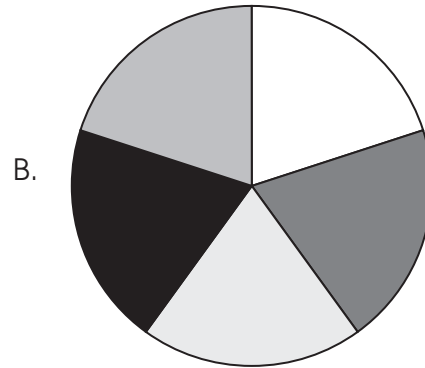
Which circle graph appears to represent these data?

Favorite Colors



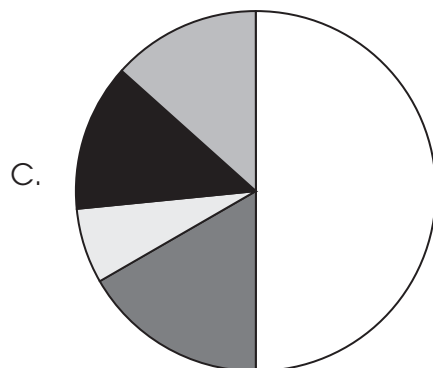
□ Blue
 ■ Green
 □ Brown
 ■ Yellow

Favorite Colors



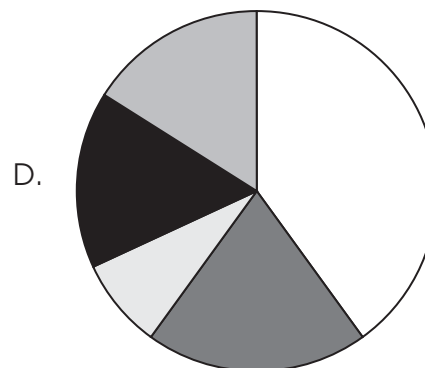
□ Blue
 ■ Green
 □ Brown
 ■ Yellow
 □ Other

Favorite Colors



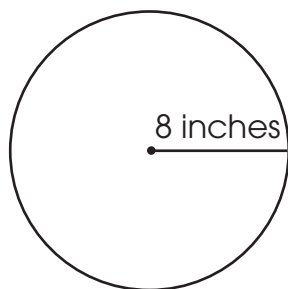
□ Blue
 ■ Green
 □ Brown
 ■ Yellow
 □ Other

Favorite Colors



□ Blue
 ■ Green
 □ Brown
 ■ Yellow
 □ Other

5. A circle with a radius of 8 inches is shown.



Which estimate of the circumference of this circle is reasonable?

- A. about 5 inches
- B. about 16 inches
- C. about 24 inches
- D. about 48 inches

Item 6 has not been slated for public release
in 2007.

M

Mathematics

7. Which expression is equivalent to $\frac{8}{9}$?

A. $8 \div \frac{1}{9}$

B. $8 \div 9$

C. $9 \div \frac{1}{8}$

D. $9 \div 8$

Items 8–10 have not been slated for public release
in 2007.



M

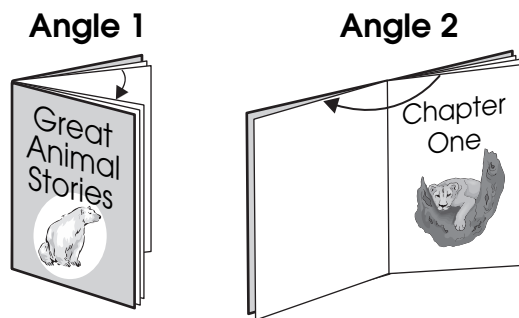
Mathematics

11. Jared wants to save \$100 to buy a tennis racket. He saves \$8 each week, and his mother gives him an extra \$0.25 for each dollar he saves.

In your **Answer Document**, determine the number of weeks it will take Jared to save \$100. Show your work or explain how you found the number of weeks.

For question 11, respond completely in your **Answer Document**. (4 points)

12. A book is opened for reading. Two angles are shown.



Which describes these two angles?

- A. Angle 1 is an acute angle and angle 2 is a right angle.
- B. Angle 1 is a right angle and angle 2 is an obtuse angle.
- C. Angle 1 is an obtuse angle and angle 2 is an acute angle.
- D. Angle 1 is an acute angle and angle 2 is an obtuse angle.

13. An input-output table is shown.

Input	Output
2	5
4	6
6	7
8	8
10	9

Which rule describes this input-output function?

- A. double the input, and add 1
- B. add 1 to each input number
- C. add 2 to each input number
- D. divide the input by 2, and add 4

Item 14 has not been slated for public release
in 2007.

15. The temperature at sunrise was -13°F . At noon, the temperature was 18°F .

What was the change in temperature between sunrise and noon?

- A. rose 5 degrees
- B. rose 31 degrees
- C. dropped 5 degrees
- D. dropped 31 degrees



Items 28–30 have not been slated for public release
in 2007.

31. A pattern is shown.

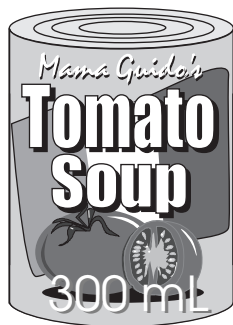
1, 4, 13, 40, 121, . . .

In your **Answer Document**, describe the rule for the pattern and find the next term. Show how you found the next term in the pattern.

For question 31, respond completely in your **Answer Document**. (2 points)

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

34. A can of tomato soup and its label are shown.



Which statement is true?

- A. The label represents surface area and the perimeter is 300 mL.
 - B. The label represents surface area and the volume is 300 mL.
 - C. The label represents volume and the surface area is 300 mL.
 - D. The label represents volume and the perimeter is 300 mL.
35. A school has 8 science classes. The range of the number of students in these classes is 7.

Which explains what the range represents?

- A. There are 7 students in each class.
- B. Half the classes have more than 7 students and half have fewer than 7 students.
- C. The difference between the number of students in the largest class and the number of students in the smallest class is 7.
- D. All the classes have more than 7 students.

38. Tony saw these four objects on his way to school.



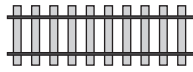
Stop Sign



Wrong Way Sign



Sidewalk



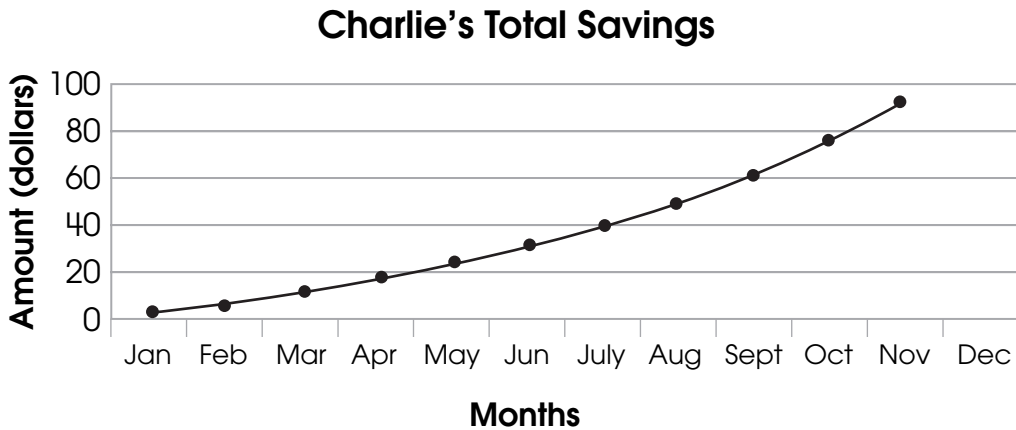
Railroad Tracks

Which statement describes how all four of these objects are the same?

- A. Opposite sides of each object are perpendicular.
- B. All interior angles of each object are right angles.
- C. Opposite sides of each object are parallel.
- D. All sides of each object are congruent.



39. The graph shows the total amount of money that Charlie has saved over time.

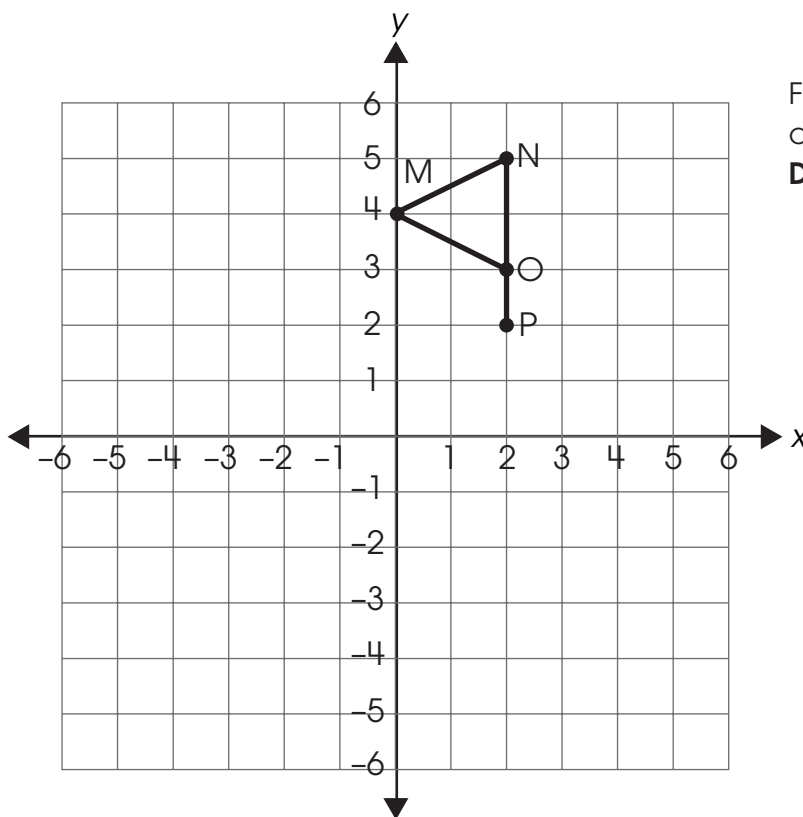


Which estimate is reasonable for the total amount of money that Charlie will save by the end of December?

- A. \$1.00
- B. \$10.00
- C. \$100.00
- D. \$1,000.00

Item 40 has not been slated for public release
in 2007.

41. Kate drew a triangular flag in the coordinate plane as shown.



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

Kate then reflected the flag over the x -axis.

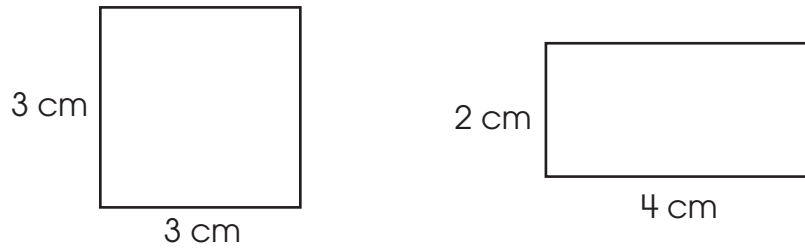
In your **Answer Document**, give the coordinates of the three vertices of the triangle and the coordinates of the endpoint of the new flag after it has been reflected over the x -axis.

42. Sal had a cactus that was 10 inches tall after 10 weeks. After 12 weeks, it was 14 inches tall, and after 13 weeks it was 15 inches tall.

Which statement describes the rate of change in the height of his cactus?

- A. no rate of change
- B. varying rate of change
- C. constant rate of change
- D. decreasing rate of change

43. A square and a rectangle are shown.

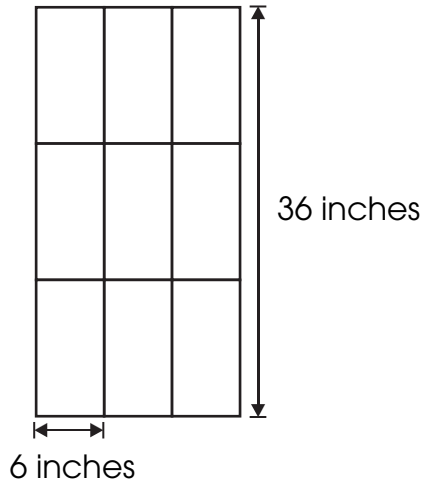


Which statement is true about these two figures?

- A. They have the same area and the same perimeter.
- B. They have different areas and the same perimeter.
- C. They have the same area and different perimeters.
- D. They have different areas and different perimeters.

Item 44 has not been slated for public release
in 2007.

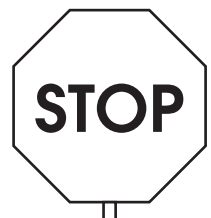
45. The window shown is divided into 9 smaller windowpanes.



Each small windowpane is similar to the large window. The height of the large window is 36 inches. The width of the small windowpane is 6 inches.

What is the ratio of the height of a small windowpane to the height of the large window?

- A. 1:1
- B. 1:2
- C. 1:3
- D. 1:6



**Grade 6 Mathematics
Answer Key
May 2007**

Item No.	Type	Content Standard	Content Standard Benchmark	Key
1	Multiple Choice	Geometry and Spatial Sense	D	A
2	Multiple Choice	Number, Number Sense and Operations	G	B
3	Multiple Choice	Patterns, Functions, and Algebra	C	C
4	Multiple Choice	Data Analysis and Probability	E	D
5	Multiple Choice	Measurement	C	D
6	Short Answer	Patterns, Functions, and Algebra	K	Not for Public Release
7	Multiple Choice	Number, Number Sense and Operations	D	B
8	Multiple Choice	Patterns, Functions, and Algebra	H	Not for Public Release
9	Multiple Choice	Measurement	F	Not for Public Release
10	Multiple Choice	Data Analysis and Probability	K	Not for Public Release
11	Extended Response	Number, Number Sense and Operations	I	4 pt rubric
12	Multiple Choice	Geometry and Spatial Sense	A	D
13	Multiple Choice	Patterns, Functions, and Algebra	E	D
14	Multiple Choice	Data Analysis and Probability	A	Not for Public Release
15	Multiple Choice	Number, Number Sense and Operations	I	B
16	Short Answer	Measurement	E	Not for Public Release
17	Multiple Choice	Geometry and Spatial Sense	F	Not for Public Release
18	Multiple Choice	Number, Number Sense, and Operations	D	Not for Public Release
19	Multiple Choice	Patterns, Functions, and Algebra	J	Not for Public Release
20	Multiple Choice	Measurement	F	Not for Public Release
21	Extended Response	Data Analysis and Probability	E; G;	Not for Public Release
22 – 27	Field test questions not used in student score			
28	Multiple Choice	Patterns, Functions, and Algebra	K	Not for Public Release
29	Multiple Choice	Geometry and Spatial Sense	D	Not for Public Release
30	Multiple Choice	Measurement	C	Not for Public Release
31	Short Answer	Patterns, Functions, and Algebra	A	2 pt rubric
32	Multiple Choice	Number, Number Sense, and Operations	I	Not for Public Release
33	Multiple Choice	Geometry and Spatial Sense	I	Not for Public Release
34	Multiple Choice	Measurement	G	B
35	Multiple Choice	Data Analysis and Probability	F	C
36	Short Answer	Number, Number Sense, and Operations	H	Not for Public Release
37	Multiple Choice	Patterns, Functions, and Algebra	G	Not for Public Release
38	Multiple Choice	Geometry and Spatial Sense	A	C
39	Multiple Choice	Data Analysis and Probability	G	C
40	Multiple Choice	Number, Number Sense, and Operations	I	Not for Public Release
41	Short Answer	Geometry and Spatial Sense	H	2 pt rubric
42	Multiple Choice	Patterns, Functions, and Algebra	L	B
43	Multiple Choice	Measurement	F	B
44	Multiple Choice	Number, Number Sense, and Operations	I	Not for Public Release
45	Multiple Choice	Geometry and Spatial Sense	J	C

Limited = 0-13; Basic = 14-19; Proficient = 20-28; Accelerated = 29-34; Advanced = 35-50
Multiple Choice = 1 point; Short Answer = 2 points; Extended Response = 4 points