Department of Education

Student Name: _____

Ohio Achievement Tests

Mathematics Student Test Booklet

May 2008

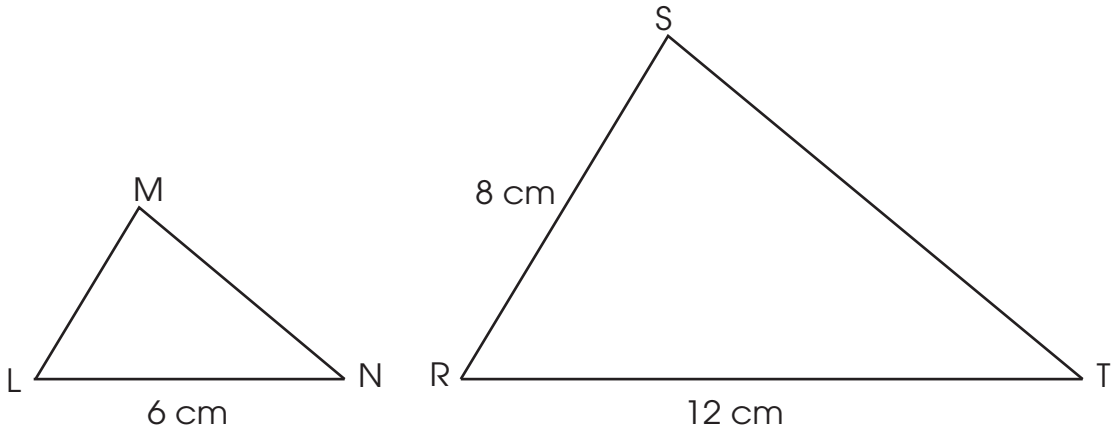
This test was originally administered to students in May 2008.

Not all items from the May 2008 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.

Item 1 has not been slated for public release in 2008.

2. Triangle LMN is similar to triangle RST as shown.



What is the length of $\overline{LM}$?

A. 2 cm

B. 4 cm

C. 8 cm

D. 16 cm

3. Monica created the number pattern shown.

2, 5, 11, 23, 47, . . .

Which rule describes Monica's number pattern?

A. Add three to the previous number.

B. Double the previous number.

C. Double the previous number and add 1.

D. Triple the previous number and subtract 1.

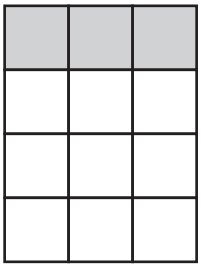
Items 4–5 have not been slated for public release in 2008.

6. In your **Answer Document**, simplify the expression 10 – 4 ÷ 0.5 + 4 to find its value.

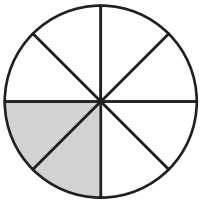
   Explain how you used order of operations to simplify the expression.

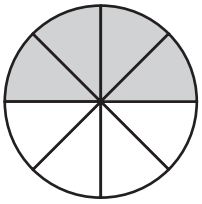
For question 6, respond completely in your **Answer Document**. (2 points)

8. A model is shown.



Which model has the same percentage of its area shaded?

A. 

B. 

C. 

D. 

9. Jeb wants to cover the floor of a sixth-grade classroom with square tiles.

What information does Jeb need?

A. the area of the floor and the area covered by each tile

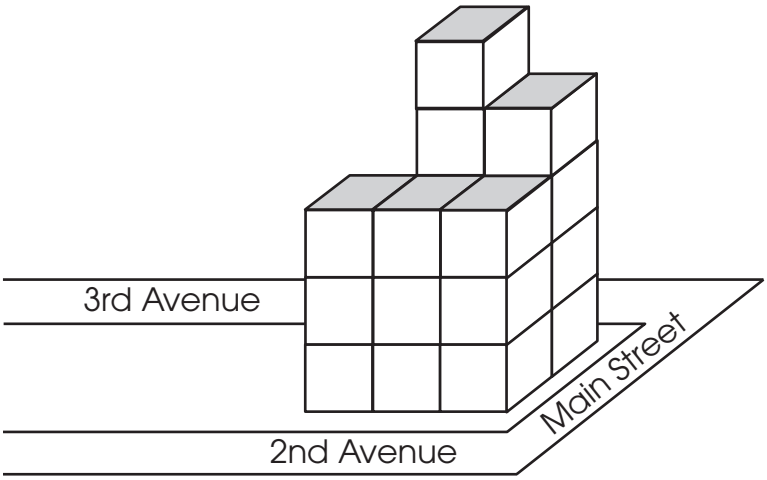
B. the volume of the classroom and the volume of each tile

C. the perimeter of the classroom and the perimeter of each tile

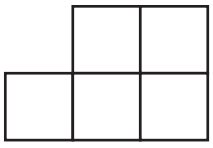
D. the height of the classroom and the height of each tile

Item 10 has not been slated for public release in 2008.

11. A scale model of a museum made of cubic blocks is shown.



A view from the top would appear as shown.



Top View

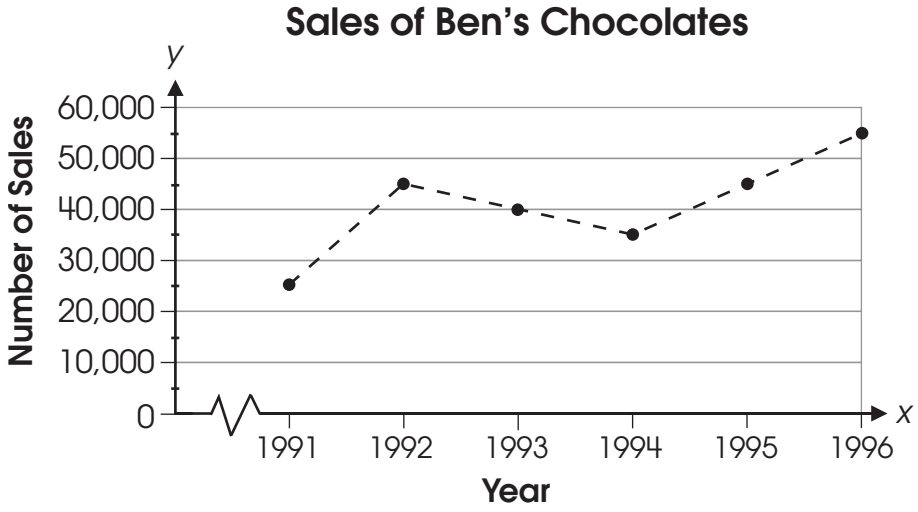
In your **Answer Document**, sketch the view as it would appear from 2nd Avenue.

Then, sketch the view as it would appear from Main Street.

Finally, explain how the view from 2nd Avenue is different from the view from 3rd Avenue.

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

19. Ben's Chocolate Shop recorded the total number of yearly sales for 1991 through 1996. The manager placed these data on the graph shown.



What was the overall change in sales from 1992 to 1994?

A. decrease of 10,000

B. decrease of 5,000

C. increase of 10,000

D. increase of 30,000

20. A carryout restaurant is choosing between two different soup containers. The manager wants to choose the container that holds the most soup.

What measurement should the manager use to decide?

A. circumference

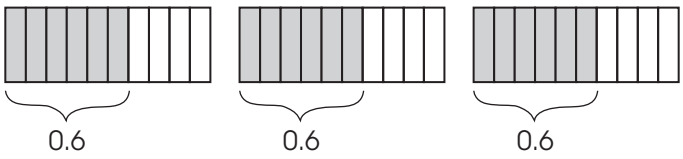
B. surface area

C. perimeter

D. volume

Items 21–23 have not been slated for public release in 2008.

24. A model for the product of two decimals is shown.



Which expression does this model represent?

A. 0.6 × 0.3

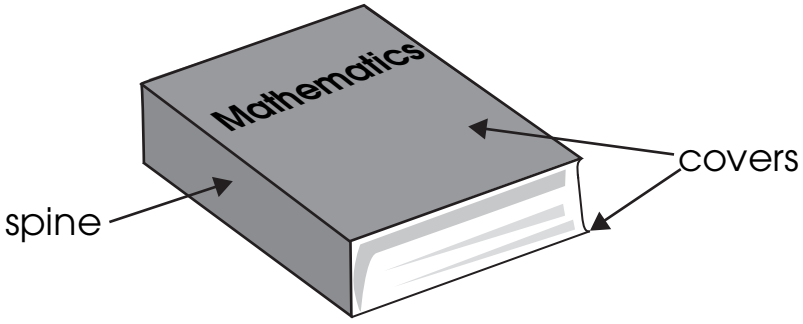
B. 0.6 × 0.4

C. 3.0 × 0.6

D. 4.0 × 0.6

Items 25–26 have not been slated for public release in 2008.

27. A textbook is shown.



Which describes the relationships between the covers and the spine of the textbook?

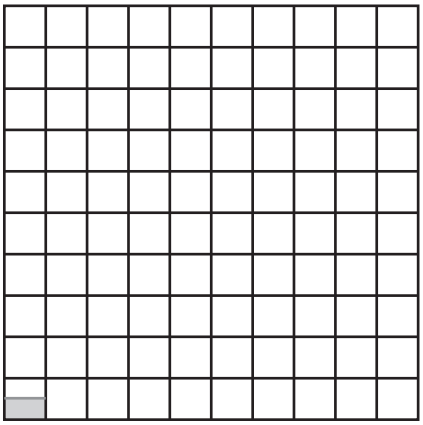
A. The covers are parallel to each other. The spine is parallel to the covers.

B. The covers are perpendicular to each other. The spine is parallel to the covers.

C. The covers are parallel to each other. The spine is perpendicular to the covers.

D. The covers are perpendicular to each other. The spine is perpendicular to the covers.

28. The grid shown represents the people that Maggie surveyed to see how many of them have an identical twin.



The shaded area represents the people surveyed that have an identical twin.

What percent of the people in Maggie's survey have an identical twin?

A. 0.1%

B. 0.5%

C. 1.0%

D. 5.0%

Items 29–30 have not been slated for public release in 2008.

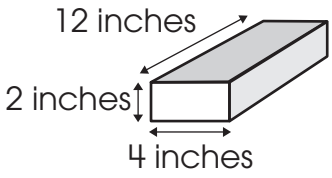
31. Denise and Javier are hiking up the same trail. They measure how far they have hiked every 10 minutes. The table shows how far they have hiked.

Time (minutes)	Distance (meters)	
	Denise	Javier
0	0	0
10	300	200
20	600	500
30	900	1,000
40	1,200	1,200

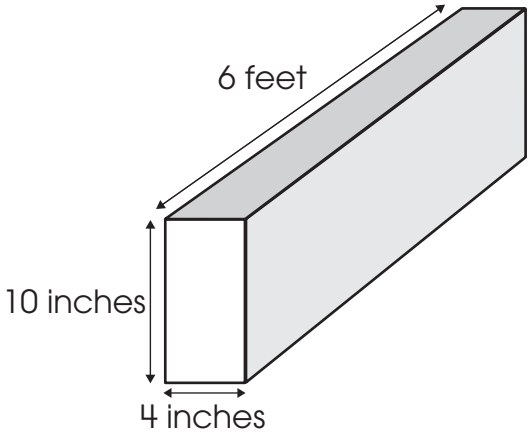
In your **Answer Document**, explain who is hiking at a constant rate and who is hiking at a changing rate. Use the data in the table to support your answer.

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

32. Pam is building a brick wall between her flower garden and her patio.



Brick



Wall

Each brick is 12 inches long, 4 inches wide and 2 inches tall. The wall will be 6 feet long, 4 inches wide and 10 inches tall.

How many bricks will Pam need to build the wall?

A. 5 bricks

B. 6 bricks

C. 30 bricks

D. 240 bricks

33. At a sale, the price of all items is 40% off the original price.

How much will Joe save on a shirt with an original price of $31.99?

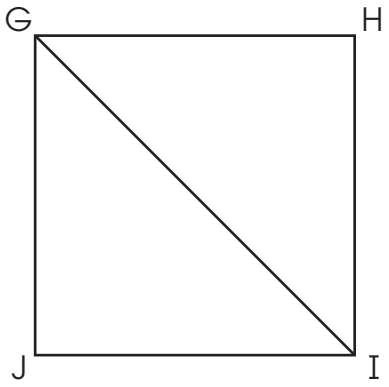
A. $ 1.92

B. $12.80

C. $19.19

D. $31.59

34. Diagonal $\overline{GI}$ divides square GHIJ into two triangles.



Which type of triangles are triangle GHI and triangle GJI?

A. right isosceles triangles

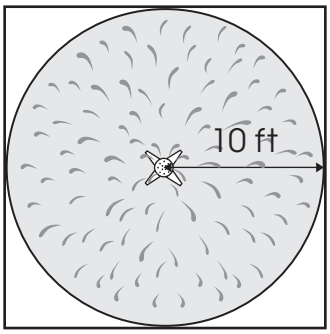
B. equilateral triangles

C. right scalene triangles

D. right acute triangles

Items 35–38 have not been slated for public release in 2008.

39. A sprinkler waters a circular section of a square lawn as shown.



The radius of the section watered by the sprinkler is 10 feet.

What is the estimated area of the circular section that the sprinkler waters?

A. about 100 square feet

B. about 200 square feet

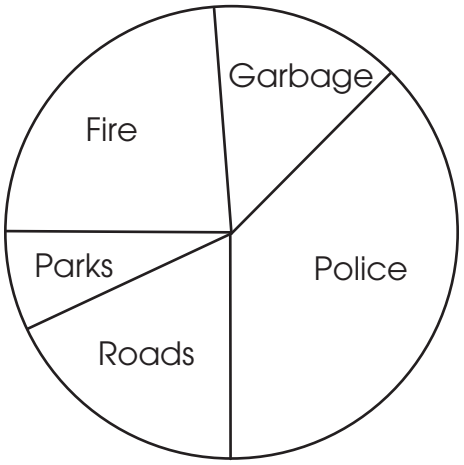
C. about 300 square feet

D. about 400 square feet

Items 40–43 have not been slated for public release in 2008.

44. The graph shows how the city budget is distributed among five departments.

City Budget



The city spends about $4 million on garbage.

About how much does the city spend on police?

A. $ 8 million

B. $12 million

C. $16 million

D. $20 million

45. There are 3 grams of fiber in $\frac{1}{2}$ cup of oatmeal. There are $1\frac{1}{8}$ cups of oatmeal left in a box.

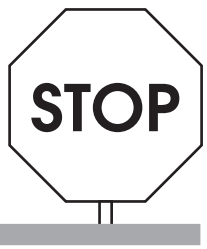
Which is the best estimate for the amount of fiber in the oatmeal left in the box?

A. $1\frac{5}{8}$ grams

B. $3\frac{1}{2}$ grams

C. 7 grams

D. 9 grams



Grade 6 Mathematics
Answer Key
May 2008

Item No.	Type	Content Standards	Content Standard Benchmark	Key
1	Multiple Choice	Number, Number Sense, and Operations	I	Not for Public Release
2	Multiple Choice	Geometry and Spatial Sense	J	B
3	Multiple Choice	Patterns, Functions, and Algebra	E	C
4	Multiple Choice	Data Analysis and Probability	E	Not for Public Release
5	Multiple Choice	Data Analysis and Probability	K	Not for Public Release
6	Short Answer	Number, Number Sense, and Operations	E	2 pt rubric
7	Multiple Choice	Patterns, Functions, and Algebra	M	Not for Public Release
8	Multiple Choice	Number, Number Sense, and Operations	D	A
9	Multiple Choice	Measurement	E	A
10	Multiple Choice	Number, Number Sense, and Operations	E	Not for Public Release
11	Extended Response	Geometry and Spatial Sense	I	4 pt rubric
12	Multiple Choice	Patterns, Functions, and Algebra	C	Not for Public Release
13 – 18	**Field Test Items Not Used in Student Score**			
19	Multiple Choice	Data Analysis and Probability	A	A
20	Multiple Choice	Measurement	G	D
21	Short Answer	Number, Number Sense, and Operations	D	Not for Public Release
22	Multiple Choice	Geometry and Spatial Sense	D	Not for Public Release
23	Multiple Choice	Data Analysis and Probability	F	Not for Public Release
24	Multiple Choice	Number, Number Sense, and Operations	H	C
25	Multiple Choice	Data Analysis and Probability	D	Not for Public Release
26	Extended Response	Patterns, Functions, and Algebra	A	Not for Public Release
27	Multiple Choice	Geometry and Spatial Sense	A	C
28	Multiple Choice	Number, Number Sense, and Operations	C	B
29	Multiple Choice	Measurement	F	Not for Public Release
30	Multiple Choice	Geometry and Spatial Sense	F	Not for Public Release
31	Short Answer	Patterns, Functions, and Algebra	M	2 pt rubric
32	Multiple Choice	Measurement	C	C
33	Multiple Choice	Number, Number Sense, and Operations	I	B
34	Multiple Choice	Geometry and Spatial Sense	G	A
35	Multiple Choice	Patterns, Functions, and Algebra	J	Not for Public Release
36	Short Answer	Measurement	G	Not for Public Release
37	Multiple Choice	Number, Number Sense, and Operations	G	Not for Public Release
38	Multiple Choice	Patterns, Functions, and Algebra	B	Not for Public Release
39	Multiple Choice	Measurement	C	C
40	Multiple Choice	Number, Number Sense, and Operations	H	Not for Public Release
41	Short Answer	Data Analysis and Probability	E	Not for Public Release
42	Multiple Choice	Number, Number Sense, and Operations	D	Not for Public Release
43	Multiple Choice	Measurement	F	Not for Public Release
44	Multiple Choice	Data Analysis and Probability	E	B
45	Multiple Choice	Number, Number Sense, and Operations	I	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