

PRACTICE TEST

# Mathematics

## Grade 7

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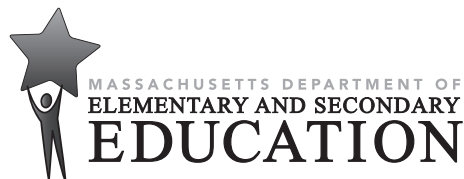
Student Name

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School Name

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District Name



# Grade 7 Mathematics

## SESSION 1

This session contains 5 questions.

*You may use your reference sheet during this session.*  
*You may **not** use a calculator during this session.*



### Directions

Read each question carefully and then answer it as well as you can. You must record all answers in your Practice Test Answer Document.

For some questions, you will mark your answers by filling in the circles in your Practice Test Answer Document. Make sure you darken the circles completely. Do not make any marks outside of the circles. If you need to change an answer, be sure to erase your first answer completely.

For other questions, you will need to fill in an answer grid. Directions for completing questions with answer grids are provided on the next page.

If a question asks you to show or explain your work, you must do so to receive full credit. Write your response in the space provided in your Practice Test Answer Document. Only responses written within the provided space will be scored.

1. Work the question and find an answer.
2. Enter your answer in the answer boxes at the top of the answer grid.
3. Print only one number or symbol in each box. Do not leave a blank box in the middle of an answer.
4. Under each answer box, fill in the circle that matches the number or symbol you wrote above. Make a solid mark that completely fills the circle.
5. Do not fill in a circle under an unused answer box.
6. Fractions cannot be entered into an answer grid and will not be scored. Enter fractions as decimals.
7. If you need to change an answer, be sure to erase your first answer completely.
8. See below for examples of how to correctly complete an answer grid.

-	1	4					
●							
○	○	○	○	○	○	○	○
0	0	0	0	0	0	0	0
1	●	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	●	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9

	4	8	3	1	6		
○							
○	○	○	○	○	○	○	○
0	0	0	0	0	0	0	0
1	1	1	1	●	1	1	1
2	2	2	2	2	2	2	2
3	3	3	●	3	3	3	3
4	●	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	●	6	6
7	7	7	7	7	7	7	7
8	8	●	8	8	8	8	8
9	9	9	9	9	9	9	9

			6	5	.	3	
○							
○	○	○	○	○	○	●	○
0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	●	3
4	4	4	4	4	4	4	4
5	5	5	5	5	●	5	5
6	6	6	●	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9

	9	.	5	5	5	5	
○							
○	○	○	●	○	○	○	○
0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	●	●	●	●	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	●	9	9	9	9	9	9

- 1 What is the value of this expression?

$$|12| + |-15|$$

- A.  $-27$
- B.  $-3$
- C.  $3$
- D.  $27$

**This question has two parts.**

- 2 The scale on a map shows that 5 centimeters = 2 kilometers.

**Part A**

What number of centimeters on the map represents an actual distance of 5 kilometers?

Enter your answer in the answer boxes at the top of the answer grid **and** completely fill the matching circles.

**Part B**

What is the actual number of kilometers that is represented by 2 centimeters on the map?

Enter your answer in the answer boxes at the top of the answer grid **and** completely fill the matching circles.

- 3 Jessica rented 1 video game and 3 movies for a total of \$11.50.

- The video game cost \$4.75 to rent.
- The movies cost the same amount each to rent.

What amount, in dollars, did Jessica pay to rent each movie?

Enter your answer in the answer boxes at the top of the answer grid **and** completely fill the matching circles.

- 4 What value of  $n$  makes the equation below true?

$$28 + n = 0$$

Enter your answer in the answer boxes at the top of the answer grid **and** completely fill the matching circles.

**This question has four parts.**

- 5** A snow day occurs when school is canceled for the day because of bad winter weather. This box shows the number of snow days at Andrew's school during each of the past six winters.

2, 5, 5, 3, 4, 5
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**Part A**

For the past six winters, what was the median number of snow days per winter at Andrew's school? Show or explain how you got your answer.

Enter your answer and your work or explanation in the space provided.

**Part B**

For the past six winters, what was the mean number of snow days per winter at Andrew's school? Show or explain how you got your answer.

Enter your answer and your work or explanation in the space provided.

**Part C**

For the past six winters, what was the mean absolute deviation of the number of snow days per winter at Andrew's school? Show or explain how you got your answer.

Enter your answer and your work or explanation in the space provided.

**Part D**

Maria lives in another state. This box shows the number of snow days at Maria's school during each of the past six winters.

0, 2, 9, 3, 1, 3
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At which school, Andrew's or Maria's, is the number of snow days per winter more predictable? Explain your reasoning. Use specific data from **both** schools in your explanation.

Enter your answer and your explanation in the space provided.

# Grade 7 Mathematics

## SESSION 2

This session contains 4 questions.

*You may use your reference sheet during this session.*  
*You may use a calculator during this session.*



### Directions

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For some questions, you will mark your answers by filling in the circles in your Practice Test Answer Document. Make sure you darken the circles completely. Do not make any marks outside of the circles. If you need to change an answer, be sure to erase your first answer completely.

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8. See below for examples of how to correctly complete an answer grid.

Figure 1 displays four 8x8 grids, each representing a different configuration of a system. The grids are labeled 1, 2, 3, and 4. Each grid has a header row and a header column. The header row contains numbers, and the header column contains symbols. The grids show the distribution of black and white dots across the 8x8 grid.

1	2	3	4
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9



- 6 A bottle contains 120 fluid ounces of laundry detergent. Which of the following is closest to the number of liters in 120 fluid ounces? (1 fluid ounce  $\approx$  0.0296 liter)

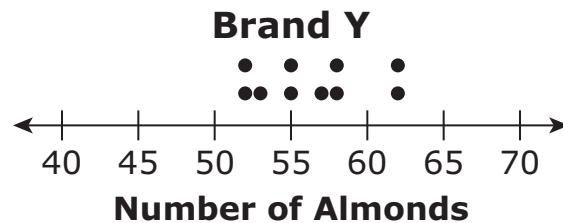
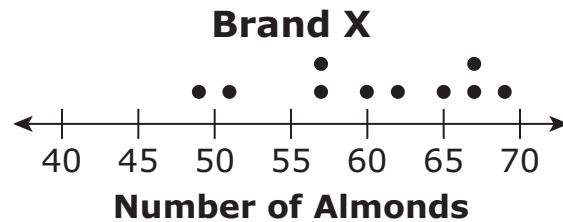
A. 3.55 liters  
B. 4.05 liters  
C. 4.16 liters  
D. 4.47 liters

- 7 A cube will be sliced once.

Select the **three** two-dimensional figures that could result from slicing the cube.

A. circle  
B. prism  
C. triangle  
D. octagon  
E. pentagon  
F. parallelogram

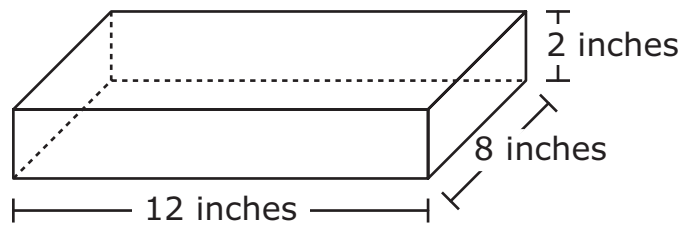
- 8 Alexis chose a random sample of 10 jars of almonds from each of two different brands, X and Y. Each jar in the sample was the same size. She counted the number of almonds in each jar. Her results are shown in the plots.



Based on the plots, which statement **best** compares the number of almonds in the jars from the two brands?

- A. The number of almonds in jars from Brand X tends to be greater and more consistent than those from Brand Y.
- B. The number of almonds in jars from Brand X tends to be greater and less consistent than those from Brand Y.
- C. The number of almonds in jars from Brand X tends to be fewer and more consistent than those from Brand Y.
- D. The number of almonds in jars from Brand X tends to be fewer and less consistent than those from Brand Y.

- 9 A rectangular prism and its dimensions are shown.



What is the volume, in cubic inches, of the rectangular prism?

Enter your answer in the answer boxes at the top of the answer grid **and** completely fill the matching circles.

# MASSACHUSETTS COMPREHENSIVE ASSESSMENT SYSTEM

## Grade 7 Mathematics Practice Test Answer Document

School Name: \_\_\_\_\_

District Name: \_\_\_\_\_

Last Name of Student: \_\_\_\_\_

First Name of Student: \_\_\_\_\_

### MARKING INSTRUCTIONS

- Use a No. 2 pencil only.
- Do not use ink, ballpoint, or felt-tip pens.
- Make solid marks that fill the circles completely.
- Erase cleanly any marks you wish to change.
- Do not make any stray marks on this form.
- Do not fold, tear, or damage this form.

1. (A) (B) (C) (D)

2. Part A

−							
•	•	•	•	•	•	•	•
0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9

Part B

−							
•	•	•	•	•	•	•	•
0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9

3.

−							
•	•	•	•	•	•	•	•
0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9

4.

−							
•	•	•	•	•	•	•	•
0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9

**5. Part A**

**5. Part B**

**5. Part C**

**5. Part D**

6. (A) (B) (C) (D)

7. (A) (B) (C) (D) (E) (F)

8. (A) (B) (C) (D)

9.

⊖							
•	•	•	•	•	•	•	•
0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9

