

GRADE

6

MATH

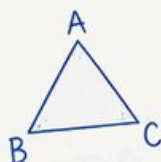
6

# Massachusetts MCAS

## PRACTICE TESTS

Standards-Aligned  
Steady Southern  
Problem Solving for  
Comprehensive  
Assessment Program

$2x + 3 = 11$



$7^2 = 49$

BUILD SKILLS.  
GAIN CONFIDENCE.  
**SUCCEED!**



### 6 PRINTED TESTS

Realistic practice to build confidence and mastery



### 2 ONLINE TESTS

Extra practice for continued success



### DETAILED ANSWER EXPLANATIONS

Learn with step-by-step solutions



### FOCUSED & EFFECTIVE

Target key math skills with purposeful practice



### 6 PRINTED TESTS + 2 ONLINE TESTS

Use these two additional online practice tests for extra review after the printed tests in this book.



### PRACTICE

Sharpen skills with targeted practice tests



### REVIEW

Understand concepts and strengthen skills

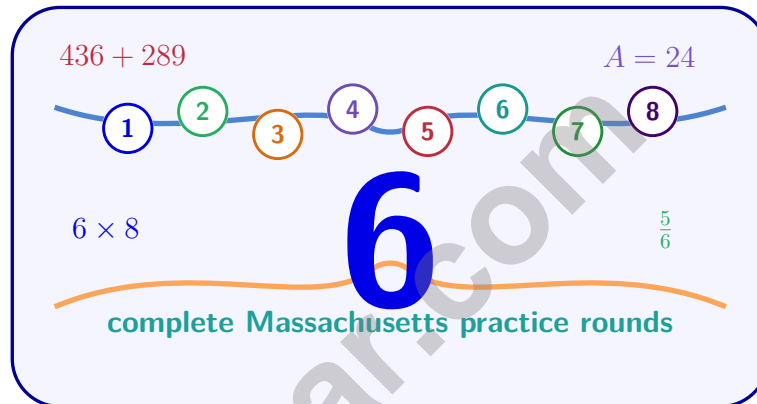


### SUCCEED

Build confidence and achieve your best

# 6 Massachusetts MCAS Grade 6 Math Practice Tests

*Standards-Aligned Bay State Math Accuracy for Massachusetts Comprehensive Assessment System*



Six complete 40-question Grade 6 practice rounds for MCAS, built for Bay State math accuracy with ratios, rational numbers, expressions, equations, geometry, statistics, answer keys, and clear explanations for every item.

**Jay Daie and Reza Nazari**



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# Welcome, Massachusetts Math Explorer!

Eight focused rounds using Bay State math accuracy

This book gives you six full Grade 6 practice tests for MCAS. Each round uses historic streets, harbor routes, and exact problem reading as a fresh mental backdrop while you read closely, choose a smart strategy, show your work, and check whether your answer makes sense.

## Your Massachusetts Practice Promise

Read like a scholar and solve like a planner: define the task, show work, and check.

Read

Plan

Check

# How to Use This Book

A six-session routine for Bay State math accuracy

1. **Preview the skills.** Scan the quick review pages before beginning the first round.
2. **Mark confidence.** Put a small star beside problems where your plan felt strong.
3. **Work in order.** Take one 40-question test at a time in a quiet place.
4. **Plan the next round.** Use the growth log to choose one habit and one skill to practice.
5. **Correct actively.** Retry missed items before reading the full explanation.

**Massachusetts review rhythm:** Complete a round, study the explanation, and write one correction rule for the next test.



## What Is Inside?

Eight MCAS tests, 320 questions, and a full review path

Part	What You Will Practice
Tests 1–2	Foundation rounds for ratios, rational numbers, operations, and careful reading.
Tests 3–5	Skill-building rounds with expressions, equations, geometry, data, and problem models.
Test 6	Final stamina round for mixed review, neat work, and flexible strategy choices.
Answer Pages	Compact keys and explanations that show why each answer works.

The tests are mixed on purpose. Bay state math accuracy means recognizing the skill even when the next question changes topic, changes format, or asks for an explanation.



Scan me!  
For more practice  
& answers

# Table of Contents

★ Practice Test 1	_____	14
★ Practice Test 2	_____	29
★ Practice Test 3	_____	43
★ Practice Test 4	_____	57
★ Practice Test 5	_____	71
★ Practice Test 6	_____	87
<b>Practice Test Answer Keys</b>	_____	<b>105</b>
<b>Practice Test Answers and Explanations</b>	_____	<b>109</b>

- 1) In a box plot, what portion of the data is represented by the upper whisker only?
- A. The bottom 25%                       C. The top 25%
- B. The middle 50%                       D. All of the data
- 2) A shop has some apples. After selling 12 apples, there are 28 left. Write an equation and solve for the original number of apples  $x$ .
- A.  $x + 12 = 28$ ;  $x = 16$                        C.  $12x = 28$ ;  $x = 2.33$
- B.  $x - 12 = 28$ ;  $x = 40$                        D.  $\frac{x}{12} = 28$ ;  $x = 336$
- 3) Which phrase is closest in meaning to  $m < 9$ ?
- A.  $m$  is at most 9                       C.  $m$  is greater than 9
- B.  $m$  is no less than 9                       D.  $m$  is less than 9
- 4) After simplifying  $6m + 2n - 3m + 4n + m$ , what is the coefficient of  $n$ ?
- 
- 5) A bank account shows a balance of  $-\$42$ . What does this mean?
- A. The account has \$42 in it                       C. The account earned \$42 in interest
- B. The account has zero dollars                       D. The account is overdrawn by \$42



6) Which statement correctly compares two absolute values?

A.  $|-4| > |5|$

C.  $|-3| = |3|$

B.  $|-6| < |2|$

D.  $|-10| < |-8|$

7) Which number is located farthest from  $-1$  on a number line?

A.  $-3.2$

C.  $0.8$

B.  $-2.1$

D.  $1.5$

8) Which list is in order from least to greatest?

A.  $0.3, 0.8, -0.5, -0.2$

C.  $-0.2, -0.5, 0.3, 0.8$

B.  $-0.5, -0.2, 0.3, 0.8$

D.  $0.8, 0.3, -0.2, -0.5$

9) What is  $-7 + 3$ ?

A.  $-10$

C.  $4$

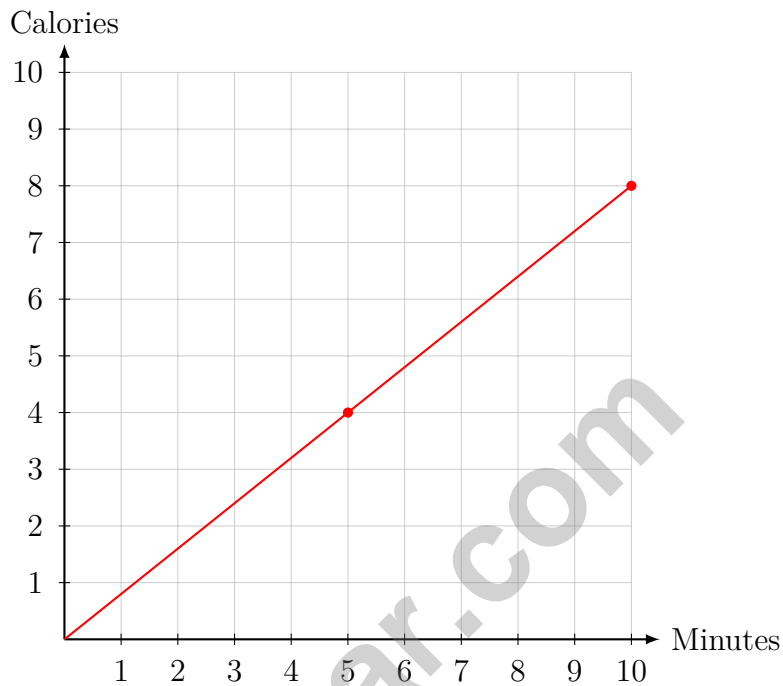
B.  $-4$

D.  $10$



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- 10) The graph below shows the relationship between minutes exercised and calories burned.



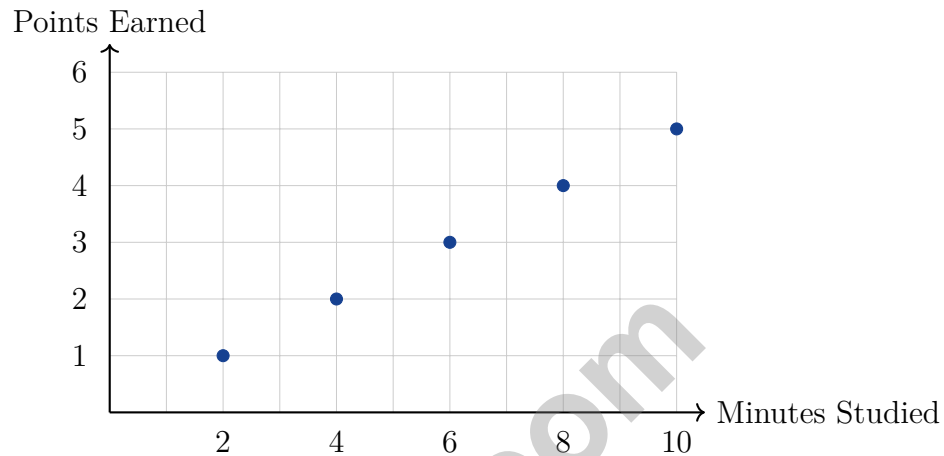
How many calories are burned per minute?

- 11) A diver's position log shows: Start at 0 m (sea level), descend to  $-25$  m, then rise to  $-10$  m. What is the net change from start to finish?

- A.  $-35$  m                       C.  $10$  m  
 B.  $-10$  m                       D.  $35$  m



- 1) The graph shows the relationship between minutes studied and test score points earned.



What is the unit rate (points per minute)?

- A. 0.25 points per minute       C. 1 point per minute  
 B. 0.5 points per minute       D. 2 points per minute
- 2) Data Set 1: mean=50, median=50, range=10. Data Set 2: mean=50, median=45, range=50. Which statement is true?
- A. Set 1 is symmetric; Set 2 is skewed right       C. Set 1 is symmetric; Set 2 is skewed left  
 B. Both data sets have identical distributions       D. Both are skewed right with the same spread



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3) Which data set has the same mean and median?

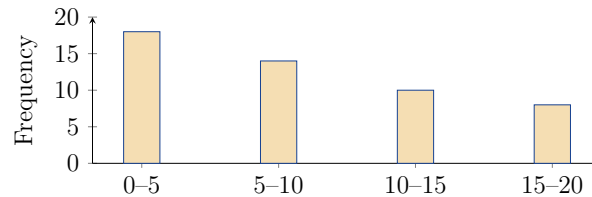
A. 1, 2, 3, 10

C. 1, 5, 9, 15

B. 2, 4, 8, 10

D. 3, 5, 7, 9, 11

4) The histogram below shows a data distribution. Which statement is accurate?



A. The distribution is skewed left

C. The distribution is symmetric

B. The distribution is bimodal

D. The distribution is skewed right

5) A stem-and-leaf plot has stem = tens digit, leaf = ones digit. If dataset is {32, 35, 37, 42, 45, 51}, what is the median?

A. 37

C. 39.5

B. 39

D. 42

6) A bag contains only red and green marbles. There are 12 red marbles and the probability of drawing red is  $\frac{3}{5}$ . How many marbles are in the bag altogether?

A. 15

C. 20

B. 18

D. 25

7) Using the same stem-and-leaf plot from Question 2, what is the range of heights?

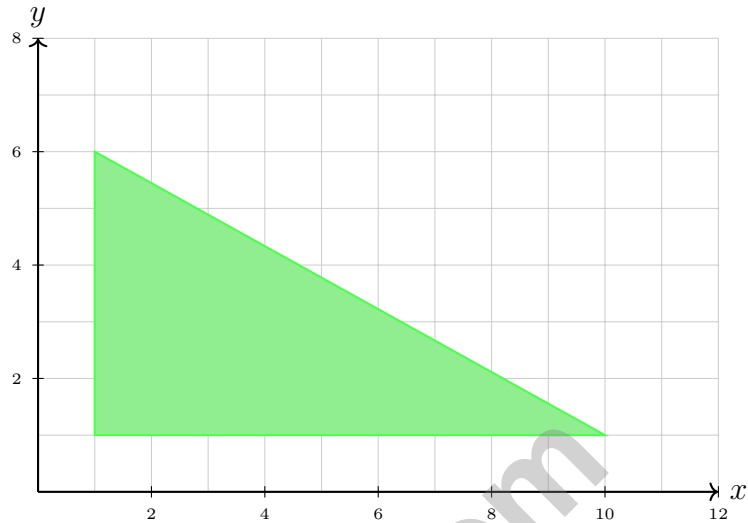
A. 35 cm

C. 25 cm

B. 30 cm

D. 40 cm





1)

Find the area of the right triangle with vertices at  $(1, 1)$ ,  $(10, 1)$ , and  $(1, 6)$ .

- A. 20 square units       C. 25 square units  
 B. 22.5 square units       D. 27 square units

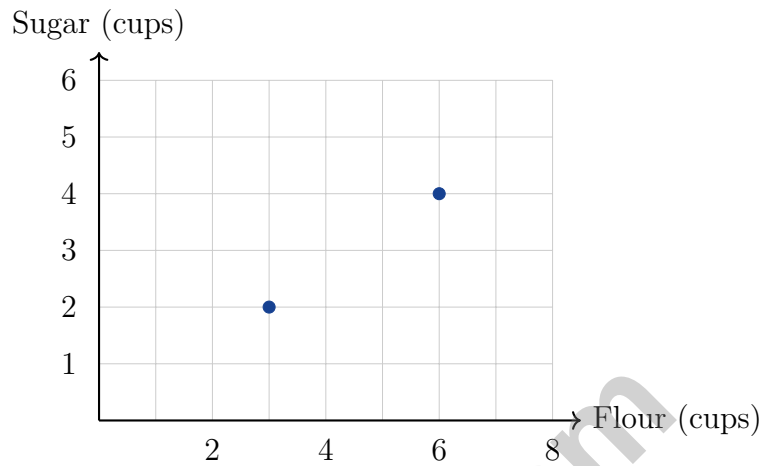
2) A classroom has 10 boys and 15 girls. Which statement correctly describes a ratio in the classroom?

- A. For every 2 boys there are 3 girls.       C. For every 5 boys there are 3 girls.  
 B. For every 3 boys there are 2 girls.       D. For every 1 boy there are 5 girls.



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& answers

- 3) A recipe uses a 3:2 ratio of flour to sugar. The graph below shows ordered pairs of this ratio.



- Which point should also be plotted to continue this ratio pattern?
- A. (4, 3)                       C. (5, 4)  
 B. (9, 6)                       D. (8, 5)
- 4) If 42 out of 150 people choose option A, what is the closest percent?
- A. 28%                       C. 35%  
 B. 30%                       D. 42%
- 5) Emma scored 28 out of 35 points on a quiz. What percent did she score?
- A. 75%                       C. 85%  
 B. 80%                       D. 90%



## Massachusetts MCAS Practice Test Answer Keys

**How to use this Massachusetts MCAS answer section with a Grade 6 student:**

1. check the answer first, then write one quick reason the choice is correct
2. mark questions to try again, especially the skills that feel connected to Bay State math accuracy
3. rework the problem before reading the full explanation, using this reminder:  
Read like a scholar and solve like a planner: define the task, show work, and check.

**A calm Massachusetts correction routine turns every missed item into useful practice. Complete a round, study the explanation, and write one correction rule for the next test.**



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& answers

## Massachusetts Practice Test Answers and Explanations

Review the six printed MCAS tests with accurate, reflective, and ready for the next page habits.

### Practice Test 1 Answers and Explanations

- Choice C is correct.** **(6.SP.B.4)** The upper whisker extends from  $Q_3$  to the maximum, representing the top 25% (the fourth quartile) of the data.
- Choice B is correct.** **(6.EE.B.5)** Starting number minus 12 sold equals 28 remaining. So  $x - 12 = 28$ , giving  $x = 40$ .
- Choice D is correct.** **(6.EE.B.8)** The symbol  $<$  directly translates to “less than,” so  $m < 9$  means “ $m$  is less than 9.”
- The correct answer is 6.** **(6.EE.A.3)** Combine  $n$  terms:  $2n + 4n = 6n$ .
- Choice D is correct.** **(6.NS.C.5)** A negative balance means the account owes money. An account balance of  $-\$42$  means the account is overdrawn (or in debt) by  $\$42$ .
- Choice C is correct.** **(6.SP.B.4)**  $|-3| = 3$  and  $|3| = 3$ , so they are equal. Option C is the only true statement.
- Choice A is correct.** **(6.SP.B.4)** Distance from  $-1$ :  $|-3.2 - (-1)| = |-2.2| = 2.2$ , which is greater than all other distances.
- Choice B is correct.** **(6.NS.C.7)** All negatives come before zero, and all zeros come before positives. Among negatives,  $-0.5 < -0.2$ . Among positives,  $0.3 < 0.8$ .
- Choice B is correct.** **(6.NS.B.3)** Start at  $-7$  on a number line and move 3 units right:  $-7 + 3 = -4$ .
- The correct answer is 0.8.** **(6.EE.C.9)** The graph shows the line passes through  $(5, 4)$  and  $(10, 8)$ . The slope (rate of change) is  $\frac{8-4}{10-5} = \frac{4}{5} = 0.8$  calories per minute.
- Choice B is correct.** **(6.EE.A.3)** Net change from start (0 m) to finish ( $-10$  m):  $-10 - 0 = -10$  m (10 meters below sea level).
- Choice A is correct.** **(6.EE.A.1)**  $2^3 = 2 \times 2 \times 2 = 8$ , and  $8 \times 3 = 24$ . Option A shows this correctly in expanded form.
- The correct answer is 10.** **(6.G.A.1)** Using  $A = \frac{1}{2}bh$ :  $80 = \frac{1}{2} \times 16 \times h \Rightarrow h = 10$  cm.
- Choice D is correct.** **(6.EE.A.3)** “The quotient of 15 and  $j$ ” is  $\frac{15}{j}$ . “Twice” that quotient means multiply by 2:  $2 \cdot \frac{15}{j}$ .
- Choice A is correct.** **(6.EE.A.3)** Substitute:  $V = 3 \times 4 \times 5 = 60$  cubic units.
- Choice B is correct.** **(6.EE.B.6)** “4 meters less” means subtract 4 from the length.
- Choice C is correct.** **(6.EE.B.8)**  $x \geq -2$  includes  $-2$  (closed circle) and all numbers greater than  $-2$  (arrow points right).
- Choice D is correct.** **(6.G.A.1)** Width:  $9 - 3 = 6$  units. Height:  $5 - 2 = 3$  units. Area =  $6 \times 3 = 18$  square units.
- Choice D is correct.** **(6.G.A.4)**  $SA = 2LW + 2LH + 2WH = 2(5)(5) + 2(5)(15) + 2(5)(15) = 50 + 150 + 150 = 350$  cm<sup>2</sup>.
- The correct answer is 15+30 and 5(9) = 45.** **(6.NS.B.4)**  $5(3+6) = 5 \cdot 3 + 5 \cdot 6 = 15 + 30 = 45$ . Also,  $5(3+6) = 5(9) = 45$ . Thus Choices A and C are correct. Choice B gives 21, Choice D gives 19, and Choice E gives 54.
- Choice A is correct.** **(6.NS.C.8)** Reflection over the  $y$ -axis negates the  $x$ -coordinate:  $(-2, 4) \rightarrow (2, 4)$ .
- Choice B is correct.** **(6.RP.A.3)** Radius  $r = \frac{12}{2} = 6$  in. Area =  $\pi r^2 \approx 3.14 \times 6^2 = 3.14 \times 36 = 113.04$  in<sup>2</sup>.
- Choice C is correct.** **(6.SP.A.3)** This expects variability across multiple people and requires collecting data. The other questions either have single fixed answers (wheels, temperature at one moment, one coat’s color) or are about one person.
- Choice C is correct.** **(6.SP.A.2)** Range = Max – Min. So  $45 = \text{Max} - 30$ , which gives Max = 75.
- Choice D is correct.** **(6.SP.A.2)** With 4 values, median is the average of the 2nd and 3rd positions. If ordered as 5, 8, 12,  $x$ , then median =  $\frac{8+12}{2} = 10$  ✓, so  $x \geq 12$ .



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& answers

Captain's Log

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## Ahoy, Math Sailor!

◇ You sailed through 6 full tests. Some waters were calm. Some waters were rough. You kept your boat steady the whole way. ◇

★ **Captain's truth:** good sailors stay calm. They use the wind. They check the map. You did all those things on every test. ★

### Sailor's Skills

- **Steady Hand:** You stay calm even when problems are tricky.
- **Map Skills:** You read each problem carefully.
- **Brave Spirit:** You believe in yourself.
- **Safe Harbor:** You finish what you start.

**Captain's tip:** on test day, sail steady. Trust the map you built through 6 practice tests. You will reach safe harbor!

If you want to share something or ask a question, please email me at [jay@testinar.com](mailto:jay@testinar.com).

**Jay Daie**

Your Math Captain

# PRACTICE TODAY. SUCCEED TOMORROW!

This Grade 6 Math Practice Tests book is designed to help students strengthen their math skills, master important concepts, and build the confidence they need to excel on comprehensive assessments.

With 6 full-length printed tests and 2 online tests, students get the review, practice, and realistic test experience they need to improve accuracy, develop problem-solving abilities, and reach their full potential.

Perfect for classroom use, homework, test preparation, and extra practice at home.

6  
PRINTED  
TESTS

+  
2  
ONLINE  
TESTS

## PERFECT FOR:

- ✓ Classroom Practice
- ✓ Homework & Review
- ✓ Independent Learning
- ✓ Test Preparation
- ✓ Skill Reinforcement
- ✓ Building Confidence

★ BUILD SKILLS.  
GAIN CONFIDENCE.  
SUCCEED!

## WHAT STUDENTS WILL GAIN



### Stronger Math Skills

Build a solid foundation through targeted practice and review.



### Better Problem Solving

Develop logical thinking and effective solution strategies.



### Deeper Understanding

Reinforce key concepts aligned with standards through meaningful practice.



### Test Confidence

Become familiar with test formats and improve accuracy and speed.



### Achieve Success

Build confidence and perform your best on test day.

## TOPICS COVERED

- ✓ Ratios & Rates
- ✓ The Number System
- ✓ Expressions & Equations
- ✓ Geometry
- ✓ Fractions & Decimals
- ✓ Percents
- ✓ Statistics & Probability
- ✓ Data Analysis
- ✓ Measurement & Conversions
- ✓ And More!



### 2 ONLINE TESTS

Extra online practice to reinforce learning and build confidence.

## MORE PRACTICE. GREATER RESULTS.

Give your child the tools needed to develop strong math skills, confidence, and a positive attitude toward learning.



6 FULL-LENGTH  
PRINTED TESTS



2 ONLINE  
PRACTICE TESTS



DETAILED ANSWER  
EXPLANATIONS