

8

Massachusetts

MCAS

GRADE 6

MATH

PRACTICE TESTS

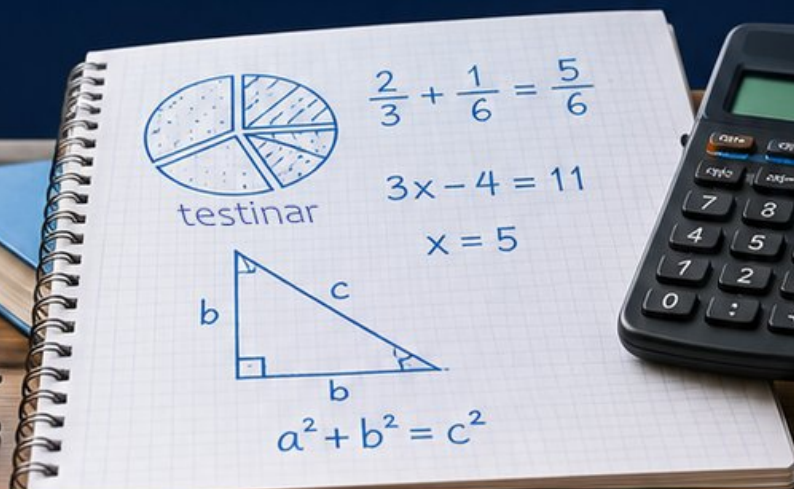
8
PRINTED
TESTS

+

2
ONLINE
TESTS

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

Standards-Aligned *Steady Southern* Problem Solving for Comprehensive Assessment Program



BUILT FOR
ACAP SUCCESS



REALISTIC TESTS
& QUESTION TYPES



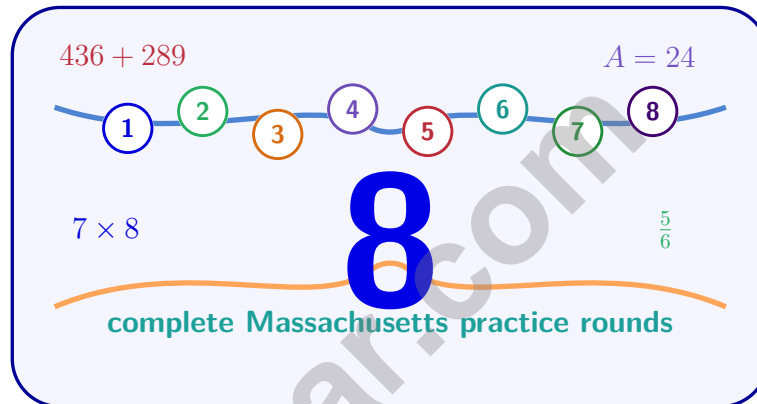
STRENGTHEN
MATH SKILLS



REVIEW, PRACTICE,
AND IMPROVE

8 Massachusetts MCAS Grade 6 Math Practice Tests

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



Eight 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 eight 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 eight-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 1–3	Foundation rounds for ratios, rational numbers, operations, and careful reading.
Tests 4–6	Skill-building rounds with expressions, equations, geometry, data, and problem models.
Tests 7–8	Final stamina rounds 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

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1) Which decimal is located between -1 and 0 on a number line?

A. -1.5

C. 0.3

B. -0.7

D. 0.8

2) In the equation $y = 5x + 2$, which quantity changes as x increases?

A. The slope

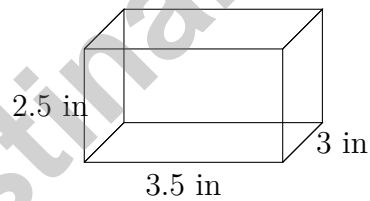
C. The value of y

B. The y -intercept

D. The value of 5

3) After distributing $3(4a - 2)$, what is the coefficient of a ?

4)



Find the volume.

A. 9 in^3

C. 26.25 in^3

B. 21 in^3

D. 31.5 in^3



5) Two vertices of a rectangle are at $(3, 2)$ and $(3, 9)$. These are adjacent vertices. If the width is 5 units, where is a third vertex?

A. $(8, 2)$

C. $(5, 2)$

B. $(8, 9)$

D. $(3, 7)$

6) A student traveled 45 miles in 3 hours. At this rate, how far will the student travel in 5 hours?

A. 50 miles

C. 75 miles

B. 60 miles

D. 90 miles

7) A cutting board has 3 feet of length. A pattern repeats every $\frac{1}{3}$ foot. How many times does the pattern repeat?

A. 6

C. 9

B. 8

D. 12

8) What is the least integer that is at least 25?

9) Compare $-\frac{2}{3}$ and $-\frac{1}{3}$. Which symbol makes the statement true?

$$-\frac{2}{3} \square -\frac{1}{3}$$

A. $<$

C. $=$

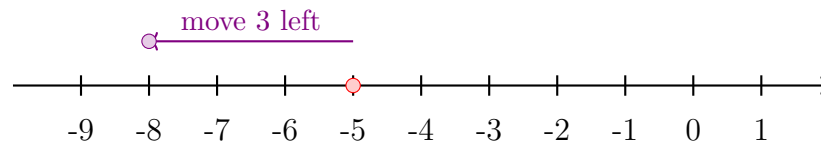
B. $>$

D. Cannot compare



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10) Show $-5 + (-3)$ on a number line.



- A. Starts at -5 , ends at -8 , sum is -8 C. Starts at 0 , ends at -8 , sum is -8
 B. Starts at -5 , ends at -2 , sum is -3 D. Starts at -5 , ends at -3 , sum is -2

11) Which expression is equivalent to $3 \times 3 \times 3 \times 3$?

- A. 3^2 C. 3^4
 B. 3×4 D. 12^3

12) A student writes an expression for “10 less than twice a number n .” What is the correct expression?

- A. $2n - 10$ C. $10 - 2n$
 B. $2(n - 10)$ D. $n - (10 \times 2)$

13) A trapezoid has bases of 12 cm and 8 cm with a height of 5 cm. What is the area?



5) A triangular prism has two congruent triangular bases (each with area 20 cm^2) and three rectangular faces with areas 30 cm^2 , 40 cm^2 , and 50 cm^2 . What is the total surface area?

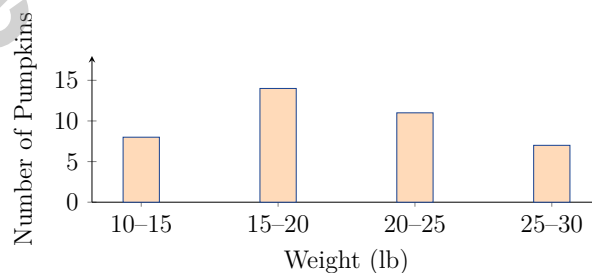
- A. 140 cm^2 C. 180 cm^2
 B. 160 cm^2 D. 200 cm^2

6) Find the Mean Absolute Deviation for: 2, 4, 6, 8.

- A. 1 C. 3
 B. 2 D. 4

7) Find the mean absolute deviation of 70, 75, 80, 82, 85, 88, 90, 92, 95. Round to the nearest hundredth.

8) A histogram shows the weight (in pounds) of pumpkins at a farm. The frequency table shows: 10–15 lb: 8 pumpkins; 15–20 lb: 14 pumpkins; 20–25 lb: 11 pumpkins; 25–30 lb: 7 pumpkins. Which range has the least number of pumpkins?



- A. 10–15 lb C. 20–25 lb
 B. 15–20 lb D. 25–30 lb



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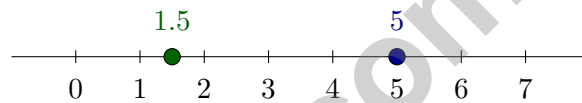
1) Which expression is equivalent to $3(x + 5)$?

- A. $3x + 15$
 C. $3x + 8$
 B. $x + 15$
 D. $3x + 5$

2) A rectangular prism has dimensions $\frac{3}{2}$ m, $\frac{4}{3}$ m, and $\frac{5}{2}$ m. What is its volume in cubic meters?

- A. 1.5 m^3
 C. 3.5 m^3
 B. 2.5 m^3
 D. 5 m^3

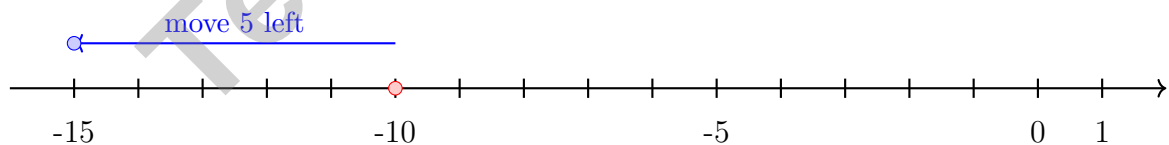
3)



Which number is between 1.5 and 5?

- A. 3
 C. 6
 B. 0.5
 D. 1

4) What is $-10 + (-5)$?



- A. -15
 C. 5
 B. -5
 D. 15



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& answers

5) What is $5^2 + 3^2$?

A. 25

B. 34

C. 49

D. 64

6) Which expression matches “the sum of half a number j and twice the same number”?

A. $\frac{j}{2} + 2j$

B. $\frac{1}{2}(j + 2j)$

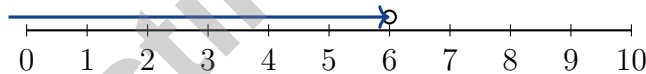
C. $\frac{j+2}{j}$

D. $2 \cdot \frac{j}{2}$

7) Sarah has s stickers. After giving 8 to her friend, she has $s - 8$ stickers left. What does the variable s represent?

 A. The number of stickers her friend has B. The number of stickers Sarah has left C. The total number of stickers Sarah had at first D. The number of stickers she gave away

8) What inequality matches this number line?



A. $x > 6$

B. $x < 6$

C. $x \geq 6$

D. $x \leq 6$



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.



Scan me!
For more practice
& answers

Massachusetts Practice Test Answers and Explanations

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

Practice Test 1 Answers and Explanations

- Choice B is correct.** **(6.SP.B.4)** Values between -1 and 0 are negative decimals closer to zero. Only -0.7 satisfies $-1 < x < 0$.
- Choice C is correct.** **(6.EE.C.9)** As x increases, the value of $5x$ increases, which causes $y = 5x + 2$ to increase. The slope 5 and intercept 2 are constants.
- The correct answer is 12.** **(6.EE.A.3)** $3(4a - 2) = 12a - 6$, so the coefficient is 12 .
- Choice C is correct.** **(6.G.A.2)** $V = 3.5 \times 2.5 \times 3 = 8.75 \times 3 = 26.25 \text{ in}^3$.
- Choice A is correct.** **(6.G.A.3)** One side has length $9 - 2 = 7$ units. If the width is 5 , the adjacent side extends 5 units horizontally from $(3, 2)$ to $(8, 2)$.
- Choice C is correct.** **(6.EE.C.9)** The constant speed is $\frac{45 \text{ miles}}{3 \text{ hours}} = 15 \text{ mph}$. In 5 hours: distance $= 15 \times 5 = 75$ miles.
- Choice C is correct.** **(6.NS.A.1)** $3 \div \frac{1}{3} = 3 \times 3 = 9$.
- The correct answer is 25.** **(6.EE.B.8)** At least 25 includes 25 and all greater numbers.
- Choice A is correct.** **(6.NS.C.7)** Both are negative. Since $-\frac{2}{3} \approx -0.67$ and $-\frac{1}{3} \approx -0.33$, we have $-\frac{2}{3} < -\frac{1}{3}$.
- Choice A is correct.** **(6.NS.B.3)** $-5 + (-3) = -8$. Start at -5 and move 3 units left, landing at -8 .
- Choice C is correct.** **(6.EE.A.1)** The expression $3 \times 3 \times 3 \times 3$ shows 3 multiplied 4 times. In exponential form, this is 3^4 , where 3 is the base and 4 is the exponent.
- Choice A is correct.** **(6.EE.B.6)** "Twice a number n " is $2n$. "10 less than" that amount means subtract 10 , so the expression is $2n - 10$.
- The correct answer is 50.** **(6.G.A.1)** Area $= \frac{1}{2}(12 + 8) \times 5 = \frac{1}{2}(20)(5) = 50 \text{ cm}^2$.
- Choice B is correct.** **(6.EE.B.8)** $x < -5$ excludes -5 (open circle) and shows all numbers less than -5 (arrow points left toward more negative values).
- Choice B is correct.** **(6.G.A.1)** $A = \frac{1}{2} \times 13 \times 6 = 39 \text{ m}^2$.
- Choice B is correct.** **(6.RP.A.3)** Radius $r = \frac{6}{2} = 3 \text{ cm}$. Area $= \pi r^2 \approx 3.14 \times 3^2 = 3.14 \times 9 = 28.26 \text{ cm}^2$.
- Choice C is correct.** **(6.SP.A.3)** The population is the entire group of interest: all sixth graders. A sample would be the subset of sixth graders who actually answered the survey.
- The correct answer is Both A (180 ÷ 3 = 60 mph) and B (120 ÷ 2 = 60 mph) match the 60 mph rate.** **(6.RP.A.3)** A matches because $180 \div 3 = 60 \text{ mph}$. B matches because $120 \div 2 = 60 \text{ mph}$. Choices C, D, and E give 50 mph , 45 mph , and about 66.7 mph .
- Choice A is correct.** **(6.SP.A.2)** Mean $= \frac{8 + 10 + 6 + 12}{4} = \frac{36}{4} = 9$.
- Choice B is correct.** **(6.SP.B.5)** Group 2 has a higher mean ($80 > 75$), indicating better performance, but also a higher SD ($8 > 5$), indicating more variability.
- Choice B is correct.** **(6.SP.B.4)** Values range from 24 to 35 , covering stem 2 (20s: $24, 26, 28, 29$) and stem 3 (30s: $31, 32, 35$).
- Choice B is correct.** **(6.RP.A.3)** The car travels 60 miles per hour. In 3 hours: $60 \times 3 = 180$ miles.
- Choice D is correct.** **(6.RP.A.3)** Pick the unit rate that matches the question. Since the y -axis is pages and the x -axis is minutes, the unit rate is $\frac{\text{pages}}{\text{minutes}} = \frac{5}{10} = 0.5$ pages per minute. In 50 minutes, the student reads $50 \times 0.5 = 25$ pages. (You can also reason: 10 minutes per 5 pages means 2 minutes per page, so $50 \div 2 = 25$ pages.)
- Choice C is correct.** **(6.EE.C.9)** Emergency and Car: $(22\% + 16\%) = 38\%$ of $\$5000 = 0.38 \times 5000 = \1900 .



Notes From the Math Gardener

Hi, Math Gardener!

◇ Look at how much you grew! 8 tests is like 8 weeks of taking care of your math garden. Every problem was a seed. Every try was water. ◇

★ **Gardeners say:** growth takes time. You can't see roots, but they are there. You can't always feel smarter, but you are. Your math garden is full! ★

Garden Check-Up

- **Roots:** STRONG! Your basic math is solid.
- **Stems:** STURDY! You can do step-by-step problems.
- **Leaves:** GREEN! You have lots of math tools.
- **Flowers:** BRIGHT! You feel proud of your work.

Gardener tip: keep watering your math garden long after the test. Every habit you built will grow with you for years!

If you want to share something or ask a question, please email me at jay@testinar.com.

Jay Daie

Your Math Gardener

MASTER MATH. ACE YOUR TESTS.

This Grade 6 Math Practice Tests book is designed to help students build confidence, strengthen math skills, and excel on comprehensive assessments.

With 8 full-length printed tests and 2 online tests, this resource provides realistic practice, a variety of question types, and detailed answer explanations to help students achieve their best.

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



PERFECT FOR

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



**PRACTICE TODAY.
SUCCEED TOMORROW.**

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.



Understand Key Concepts

Reinforce important math ideas aligned with standards.



Test Confidence

Get familiar with test formats and improve accuracy.



Achieve Success

Build confidence and perform your best on test day.

TOPICS COVERED

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



8 FULL-LENGTH
PRACTICE TESTS



2 ONLINE
PRACTICE TESTS



DETAILED ANSWER
EXPLANATIONS