

$\frac{2}{3}$

# FULL-LENGTH

$\frac{2}{4}$

# Massachusetts

$7 \times 8 =$

$0,25$



Aligned to State Standards

# MCAS

$7 \times 8$

# MATH

$56 \div 7$

Grade

# 5

$(a+b)^2$

# PRACTICE TESTS

Complete State Standards Review  
with Answer Key and  
Essential Math Skills Practice



**3 Full-Length Practice Tests**  
Aligned to State Standards



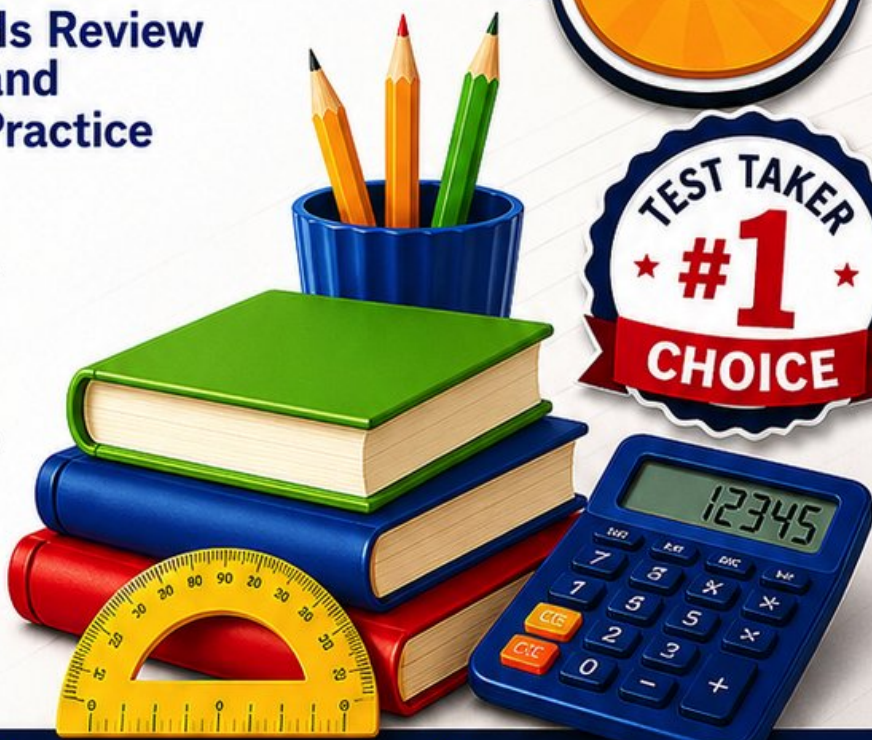
**Covers All Grade 5 Math Topics**  
Numbers & Operations, Fractions,  
Decimals, Geometry, Measurement,  
Data & Problem Solving



**Build Confidence**  
Strengthen Skills • Improve Accuracy  
• Boost Test Readiness



**Detailed Answer Key**  
Step-by-Step Explanations  
for All Questions



WRITTEN FOR  
GRADE 5 STUDENTS



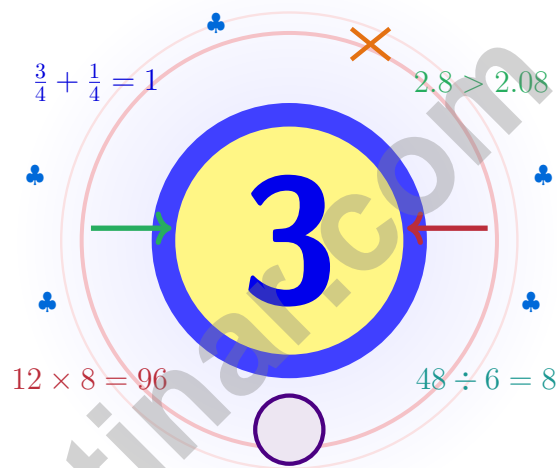
PERFECT FOR  
TEST PREP & REVIEW



CLASSROOM, HOME,  
OR SELF-STUDY USE

# 3 Massachusetts MCAS Grade 5 Math Practice Tests

*Bay-state math for thinkers who keep their head*



Three full tests, a friendly quick review, smart strategy pages, and student-tested support that help Grade 5 mathematicians from The Bay State walk in ready to think.

**Jay Daie and Reza Nazari**



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# Welcome Aboard, Massachusetts Math Crew

Bay-state math for thinkers who keep their head

## Just for Massachusetts Grade 5 Thinkers

Math is a lot like the Freedom Trail – one careful step leads to the next, and every stop adds something to the story.

Some questions will feel easy from the very first read. Others will ask you to pause, sketch, estimate, or try again. That is not a problem. That is practice doing exactly what it should do. Every honest attempt grows your math brain a little stronger.

### Look

Look at the problem like a detective looks at a clue.

### Test

Test your idea with one careful step at a time.

### Grow

Grow stronger by reviewing exactly what tripped you up.

**A Massachusetts promise to yourself:** I will follow each problem like a path in Boston: one stop, one note, one careful next step.

# Your Step-by-Step Plan

A simple game plan that turns practice into real progress

## Step 1: Read

**Read the quick review pages first.**  
Wake up the big Grade 5 ideas before the test starts so your brain is already warmed up.

## Step 2: Try

**Try one test with full attention.**  
Find a calm corner, settle in, and aim for careful, honest choices before quick ones.

## Step 3: Reflect

**Reflect on which skills want more sunlight.**  
Circle missed questions, sort out what went sideways, and notice which skills are calling for more attention.

## Step 4: Lift

**Lift those skills with practice before test 2.**  
Read the explanation, fix the work, and carry that lesson forward into the next test.

## A Three-Week Climb

|               |   |
|---------------|---|
| <b>Week 1</b> | Use Test 1 to scout the territory.                  |
| <b>Week 2</b> | Use Test 2 to repair the trail.                     |
| <b>Week 3</b> | Use Test 3 to walk it cleanly from start to finish. |



Scan me

# Practice Test Preview

## What these practice tests help Grade 5 students build

These three practice tests prepare Grade 5 students in the Bay State for the Massachusetts MCAS with the steady curiosity of a young historian. The goal is bigger than getting answers right. Students are practicing how to read with care, choose a strategy, solve step by step, and explain their reasoning clearly – the same way mathematicians do every single day.

### Selected-Response Questions

Students solve the problem and choose the best answer. Estimating first, ruling out weak choices, and checking for reasonableness can save both time and points.

### Constructed-Response Questions

Students show their steps, explain a method, or back up an answer with clear math. Clean reasoning matters because it shows how the answer was actually found.

### Grade 5 Ideas That Show Up Again and Again

- place value, comparing numbers, and rounding
- multi-digit addition, subtraction, multiplication, and division
- fractions, mixed numbers, and decimals
- perimeter, area, volume, and measurement conversions
- line plots, tables, numerical patterns, and coordinate points
- geometry and multi-step real-world problems

**What strong work looks like on the MCAS:** the math is correct, the steps are readable, the labels and units match the problem, and the final answer truly answers the question being asked.



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## Grade 5 Mathematics Reference Materials

### PERIMETER AND AREA

Perimeter of Rectangle  $P = 2l + 2w$  or  $P = 2(l + w)$

Area of Rectangle  $A = l \times w$

Area of Triangle  $A = \frac{1}{2} \times b \times h$

Volume of Rectangular Prism  $V = l \times w \times h$

### LENGTH

#### Customary

1 foot (ft) = 12 inches (in.)

1 yard (yd) = 3 feet (ft)

1 yard (yd) = 36 inches (in.)

#### Metric

1 meter (m) = 100 centimeters (cm)

1 centimeter (cm) = 10 millimeters (mm)

1 kilometer (km) = 1,000 meters (m)

### CAPACITY

#### Customary

1 cup (c) = 8 fluid ounces (fl oz)

1 pint (pt) = 2 cups (c)

1 quart (qt) = 2 pints (pt)

1 gallon (gal) = 4 quarts (qt)

#### Metric

1 liter (L) = 1,000 milliliters (mL)

### WEIGHT AND MASS

#### Customary

1 pound (lb) = 16 ounces (oz)

#### Metric

1 kilogram (kg) = 1,000 grams (g)

1 gram (g) = 1,000 milligrams (mg)

### TIME

1 minute (min) = 60 seconds (sec)    1 week = 7 days

1 hour (hr) = 60 minutes (min)    1 year = 12 months

1 day = 24 hours (hr)    1 year = 52 weeks



1) Solve the missing addend problem:  $\frac{3}{4} + ? = \frac{7}{8}$

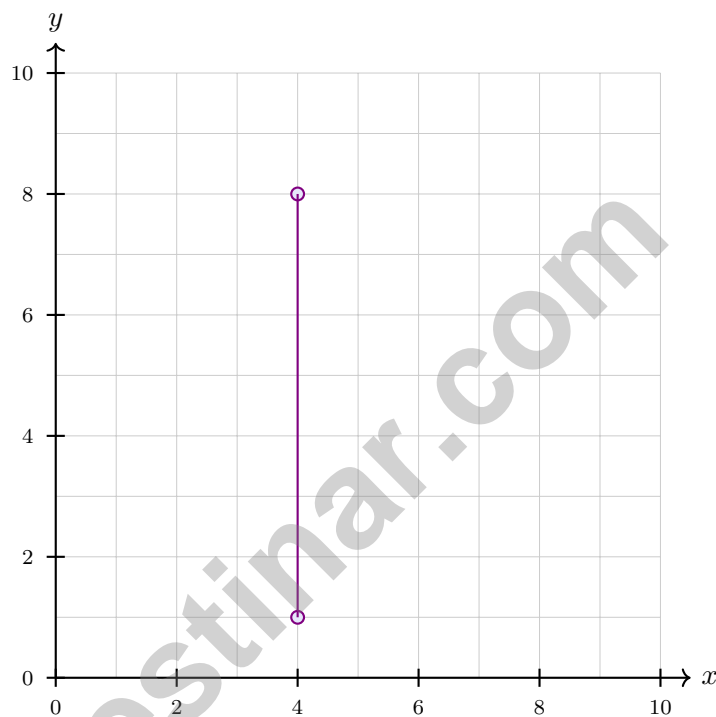
A.  $\frac{1}{8}$

B.  $\frac{1}{4}$

C.  $\frac{5}{8}$

D.  $\frac{13}{8}$

2) Which set of points would form a vertical line segment on the coordinate plane?



A. (3, 2) and (7, 5)

B. (4, 1) and (4, 8)

C. (5, 6) and (6, 5)

D. (2, 4) and (3, 4)

3) Sarah has  $\frac{3}{4}$  of a pound of chocolate. She uses  $\frac{1}{3}$  of it to make brownies. How much chocolate does she use?

A.  $\frac{3}{12}$  pounds or  $\frac{1}{4}$  pounds

B.  $\frac{3}{16}$  pounds

C.  $\frac{2}{3}$  pounds

D. 1 pound



4) A tape diagram shows 1 whole divided into fourths. Which equation asks how many fourths fit in the whole?

A.  $\frac{1}{4} \div 1 = n$

C.  $1 \div \frac{1}{4} = n$

B.  $1 \times \frac{1}{4} = n$

D.  $1 + \frac{1}{4} = n$

5)  $100 \times 100 \times 100 = ?$

A. 10,000

C. 1,000,000

B. 100,000

D. 10,000,000

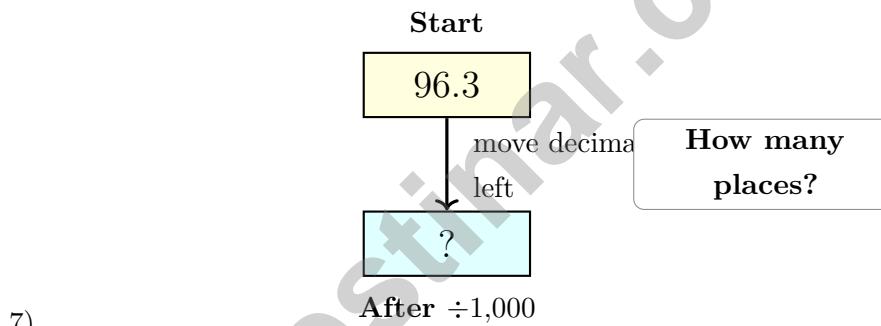
6) Subtract:  $\frac{7}{9} - \frac{2}{3}$

A.  $\frac{1}{3}$

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

B.  $\frac{5}{9}$

D.  $\frac{4}{7}$



When dividing 96.3 by 1,000, how many places does the decimal move to the left, and what is the result?

A. 1 place; 9.63

C. 3 places; 0.0963

B. 2 places; 0.963

D. 4 places; 0.00963



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1) Write the expanded form of 7.29 using fractions:  $7 + \frac{2}{10} + \frac{9}{100}$ .

A.  $72 + \frac{9}{100}$

B.  $7 + \frac{2}{100} + \frac{9}{1000}$

C.  $7 + \frac{9}{10} + \frac{2}{100}$

D.  $7 + \frac{2}{10} + \frac{9}{100}$

2) A rectangular fish tank has a base of 6 inches by 4 inches. If the tank is 5 inches tall, what is its volume?

A.  $100 \text{ in}^3$

B.  $110 \text{ in}^3$

C.  $120 \text{ in}^3$

D.  $150 \text{ in}^3$

3) Compare 0.25 and 0.52 using place value. Which is greater?

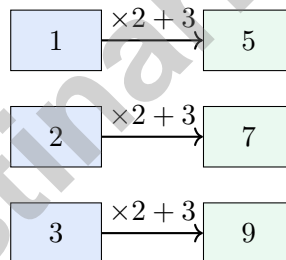
A. 0.25

B. Cannot determine

C. Equal

D. 0.52

4) Use the rule shown in the arrow diagram to find which input gives 13.



Which input would give an output of 13?

A. 4

B. 5

C. 7

D. 8



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## Practice Test Answer Keys

### How to use this section:

1. check your answer
2. circle missed questions
3. rework them before reading the explanation

**Good correction habits build strong scores.**

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## Practice Test Answers and Explanations

### Practice Test 1 Answers and Explanations

- Choice A is correct.** **(5.NF.A.1)** Rewrite  $\frac{3}{4}$  as  $\frac{6}{8}$ . Since  $\frac{6}{8} + \frac{1}{8} = \frac{7}{8}$ , the missing addend is  $\frac{1}{8}$ .
- Choice B is correct.** **(5.G.A.2)** A vertical line has the same  $x$ -coordinate for both points. Choice B has both points at  $x = 4$ , making them vertical.
- Choice A is correct.** **(5.NF.B.4)**  $\frac{1}{3} \times \frac{3}{4} = \frac{3}{12} = \frac{1}{4}$  pound.
- Choice C is correct.** **(5.NF.B.6)** The model counts fourth-size pieces inside 1 whole. So the matching equation is  $1 \div \frac{1}{4} = n$ .
- Choice C is correct.** **(5.NBT.A.2)** There are three factors of 100. Each one contributes two zeros, so the product has six zeros: 1,000,000.
- Choice C is correct.** **(5.NF.A.2)** Use ninths:  $\frac{2}{3} = \frac{6}{9}$ . Then  $\frac{7}{9} - \frac{6}{9} = \frac{1}{9}$ .
- Choice C is correct.** **(5.NBT.A.2)** Dividing by 1,000 (which is  $10^3$ ) requires moving the decimal 3 places to the left:  $96.3 \div 1,000 = 0.0963$ .
- Choice B is correct.** **(5.MD.B.2)** The pieces at least 1 foot long are 1,  $1\frac{1}{4}$ , and  $1\frac{1}{2}$  feet. Their total is  $3\frac{3}{4}$  feet.
- Choice D is correct.** **(5.MD.C.4)**  $V = 8 \times 5 \times 3 = 40 \times 3 = 120 \text{ cm}^3$ .
- Choice A is correct.** **(5.MD.B.2)** Add the unique costs:  $\$1 + \$2 + \$3 + \$4 + \$5 = \$15$ .
- Choice D is correct.** **(5.NF.A.2)** The LCD is the least common multiple (LCM) of the denominators—the smallest number that both divide into evenly.
- Choice C is correct.** **(5.OA.A.1)** Start with the inner parentheses:  $4 - 1 = 3$ . Then the bracket is  $5 \times 3 = 15$ , and the braces become  $2 + 15 = 17$ .
- Choice C is correct.** **(5.OA.A.1)** The parentheses make  $5 + 3 = 8$ . Then division and multiplication go left to right:  $40 \div 8 = 5$ , and  $5 \times 2 = 10$ .
- Choice C is correct.** **(5.NF.B.4)**  $3\frac{1}{2} \times 2 = \frac{7}{2} \times 2 = \frac{14}{2} = 7$  square meters.
- The correct answer is 90.** **(5.NBT.A.2)** Dividing by 1,000 removes three zeros:  $90,000 \rightarrow 90$ .
- Choice A is correct.** **(5.NF.B.7)**  $\frac{1}{2} \div 3 = \frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$  hectare.
- Choice D is correct.** **(5.NF.B.6)**  $\frac{2}{3} \times 1\frac{1}{2} = \frac{2}{3} \times \frac{3}{2} = \frac{6}{6} = 1$  cup.
- Choice A is correct.** **(5.NBT.A.3)** 234 small squares out of 1000 represents  $\frac{234}{1000} = 0.234$ .
- The correct answer is 40.** **(5.MD.C.4)** Multiply length, width, and height to count the unit cubes.  $2 \times 4 \times 5 = 40$  cubic units.
- The correct answer is 114 m<sup>3</sup>.** **(5.MD.C.3)** The first prism is  $7 \times 3 \times 4 = 84$  cubic meters. The second is  $5 \times 3 \times 2 = 30$  cubic meters. Together they make 114 cubic meters.
- Choice D is correct.** **(5.NBT.A.2)** When multiplying by 10, add one zero to the right:  $7 \times 10 = 70$ .
- Choices A, B are correct.** **(5.G.A.2)** The matching pairs are (0, 0), (2, 4), (4, 8), (6, 12), (8, 16). C and D misalign the two sequences.
- Choice A is correct.** **(5.NBT.B.7)** Hundredths:  $8 + 6 = 14$  (regroup 1 tenth); tenths:  $3 + 4 + 1 = 8$ ; ones:  $5 + 2 = 7$ . The chart shows 7 ones, which is correct.
- Choice B is correct.** **(5.MD.C.5)** Garden A:  $\frac{1}{2} \times \frac{2}{3} = \frac{2}{6} = \frac{1}{3}$  acre. Garden B:  $\frac{3}{4} \times \frac{1}{2} = \frac{3}{8}$  acre. Since  $\frac{3}{8} > \frac{1}{3}$ , Garden B is larger.
- Choice C is correct.** **(5.OA.B.3)** Differences: 1, 2, 3, 4, so next difference is 5:  $11 + 5 = 16$ .
- Choice D is correct.** **(5.NF.B.7)**  $8 \div \frac{1}{3} = 8 \times 3 = 24$ .
- Choice D is correct.** **(5.MD.A.1)** Since 1 pint = 2 cups, divide 8 by 2:  $8 \div 2 = 4$  pints.
- Choice B is correct.** **(5.NF.A.2)**  $\frac{1}{2} + \frac{1}{3}$  is about  $\frac{1}{2} + \frac{1}{2} = 1$ . Choice A is much closer to 0, while choices C and D are greater than 1.
- Choice A is correct.** **(5.MD.C.5)** The base layer has  $5 \times 5 = 25$  square units. Divide the volume by the base area:  $150 \div 25 = 6$ , so the height is 6 centimeters.



### Personal Trainer Wrap-Up

#### Math Athlete, Listen Up!

◇ 3 practice tests done. That's serious training. Your math muscles are strong, your endurance is high, and your reflexes (recognizing problem types) are quick. You're in great shape for the big test. ◇

★ **Trainer's wisdom:** muscle memory is real, even in math. The more you do something, the more your brain knows how to do it without thinking. You've built that muscle memory over 3 tests. Now it's automatic. ★

#### Athlete's Performance Card

- **Endurance:** TOP-TIER! You can finish a long test without burnout.
- **Strength:** STRONG! You handle multi-step problems with power.
- **Speed:** SHARP! You move efficiently from question to question.
- **Recovery:** GREAT! You bounce back fast from tough questions.

**Trainer's tip:** on test day, hydrate, breathe deeply, and warm up with the easier questions first. Build your rhythm. Your training will carry you the rest of the way.

If you'd like to share your experience or have questions, please email me at [reza@testinar.com](mailto:reza@testinar.com). I'd love to hear from you!

**Reza Nazari & Jay Daie**

Your Math Trainer (You're In Great Shape)

# Build Skills. Boost Confidence. Excel on the Grade 5 Math Test.

Help your child succeed with confidence! This book includes **3 full-length Grade 5 Math practice tests** aligned to state standards. With a focus on essential skills, problem solving, and test readiness, it's the perfect resource for classroom, home, or on-the-go practice.



## WHAT'S INSIDE:



### 3 Full-Length Grade 5 Math Practice Tests

Realistic test format to build familiarity and confidence.



### Covers All Essential Math Topics

Fractions, decimals, geometry, measurement, data, number operations, and more.



### Build Strong Math Skills

Strengthen understanding and problem-solving through varied question types.



### Detailed Answer Key

Step-by-step explanations to help your child learn from mistakes and improve.



### Track Progress & Improve

Use score trackers to identify strengths and focus on areas that need more practice.



## The Smarter Way to Prepare!

Consistent practice builds stronger skills, sharper thinking, and test-day success.

- ✓ Reinforce classroom learning
- ✓ Improve accuracy and speed
- ✓ Reduce test anxiety
- ✓ Achieve your best score!



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