

9

Massachusetts

MCAS

GRADE 5 MATHEMATICS PRACTICE TESTS

Full-Length Standards-Aligned Practice
for Strong Math Performance

$$A = l \times w$$

$$x^2 + 3x - 4 = 0$$

$$y = 2x + 1$$



9

FULL-LENGTH
PRACTICE
TESTS

$$2,345 \times 6 = 14,070$$



$$\frac{3}{4} + \frac{1}{8} = \frac{7}{8}$$

$$7.2 \div 0.8 = 9$$



$$(12 + 8) \div 4 = 5$$



Build Confidence



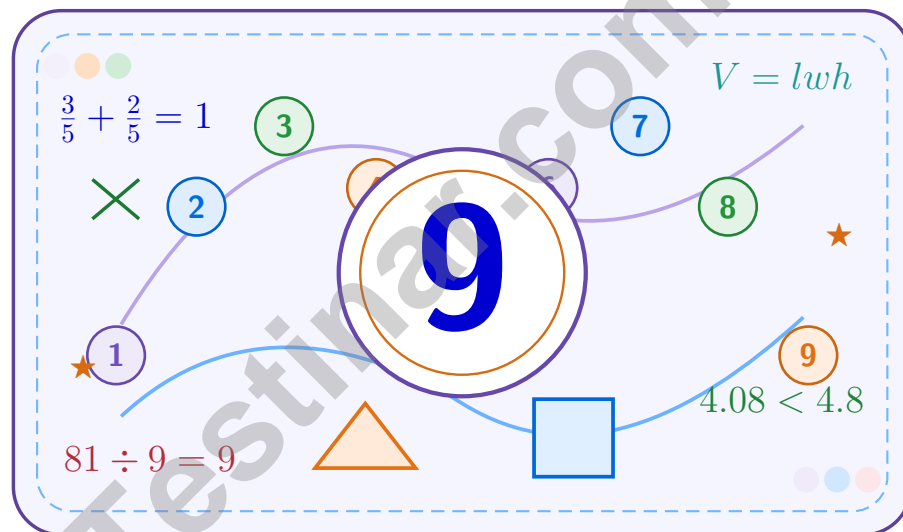
Improve Math Skills



Achieve Success

9 Massachusetts MCAS Grade 5 Math Practice Tests

A nine-step confidence climb with clear review, smart strategy, and practice that gets stronger every round



Nine full tests, focused skill boosters, and student-friendly support from start to finish for Grade 5 mathematicians who want to climb higher.

Jay Daie and Reza Nazari



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Welcome to the Confidence Climb

This book is here to help you practice with purpose and rise step by step

To the Grade 5 Mathematician

This practice book is a place to think, try, fix, and grow. You do not have to be perfect on the first question or the first test. What matters most is careful effort, clear work, and learning from each round of practice.

Use these nine tests like stepping-stones. Take one test at a time, check your answers honestly, and notice which skills need more attention. Small improvements add up fast.

Try

Give each problem your best thinking.

Check

Study mistakes and learn what happened.

Rise

Bring that lesson into the next round.

A strong habit for every page: read carefully, estimate when it helps, show your steps, and keep going even when a question feels tricky. That is how steady math confidence is built.

How to Use This Book

A simple practice routine that turns nine tests into steady growth

A Nine-Session Climb Map

Session	Mission Focus
1	Take Test 1; review place value and operation slips.
2	Take Test 2; keep work neat and easy to read.
3	Take Test 3; give extra time to fractions and decimals.
4	Take Test 4; slow down on word problems and units.
5	Take Test 5; compare scores and habits with earlier rounds.
6	Take Test 6; notice which habits are now automatic.
7	Take Test 7; explain open-ended answers clearly.
8	Take Test 8; review topics that still need attention.
9	Take Test 9; finish with calm, careful, confident work.

Step 1: Warm Up

Start with the quick review.
Spend a few minutes refreshing the ideas before you start a test.

Step 2: Take the Test

Take one full practice test.
Work in a quiet space and let accuracy matter more than speed.

Step 3: Study the Pattern

Check your work honestly.
Circle missed questions and notice patterns in the mistakes.

Step 4: Learn, Then Retry

Read the explanation and try again.
Learning happens after the test too. Fixing mistakes is one of the smartest parts of practice.



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Test Overview

What this practice book helps students do

These practice tests are designed to help Grade 5 students get comfortable with the kind of thinking used on the Massachusetts MCAS. The goal is bigger than only getting answers right. Students are practicing how to read closely, choose a strategy, solve carefully, and explain their work when needed.

Selected-Response Questions

Students solve the problem and choose the best answer. Estimating first and crossing out weak choices can save time and points.

Constructed-Response Questions

Students show their thinking, steps, models, or explanations. Even when unsure, writing what they know can help organize the problem.

Grade 5 Skills You Will Practice Often

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

What strong work looks like: the answer is correct, the steps are clear, the labels or units are included, and the final result makes sense.



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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)

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WEIGHT AND MASS

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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) What is $4.5 \div 100$?

A. 0.45

C. 45

B. 450

D. 0.045

2) A composite solid has total volume 210 cubic feet. One rectangular-prism part has volume 126 cubic feet. What is the volume of the other non-overlapping part?

Record your answer in the space provided.

3) Add: $\frac{2}{7} + \frac{3}{4}$

A. $\frac{5}{11}$

C. $\frac{5}{28}$

B. $\frac{29}{28}$

D. $\frac{8}{28}$

4) What is $\frac{1}{8} \div 5$?



$\frac{1}{8}$ split into 5

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

C. $\frac{1}{13}$

B. $\frac{1}{40}$

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

5) A recipe requires 2.5 liters of broth. A container holds 2,500 milliliters. Is the container large enough?

A. Yes, and there will be extra

C. No, it is too small

B. Yes, but it will be full

D. Cannot determine



6) A fuel pump displays that a car is traveling at an average of 28.5 miles per gallon. If the car has used 12 gallons, how many miles has it traveled?

A. 320 miles

C. 334 miles

B. 328 miles

D. 342 miles

7) What is $2.8 \times 1,000$?

A. 28

C. 2,800

B. 280

D. 28,000

8) Which factor will make $28 \times$ factor less than 28?

$\frac{6}{5} > 1$

$\frac{9}{9} = 1$

$\frac{5}{7} < 1$

$1\frac{1}{5} > 1$

Compare each factor to 1

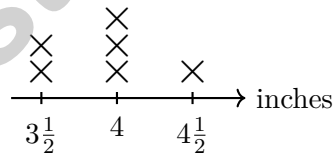
A. $\frac{6}{5}$

C. $\frac{5}{7}$

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

D. $1\frac{1}{5}$

9) The line plot shows fish lengths in inches. What is the total length of all the fish?



Record your answer in the space provided.



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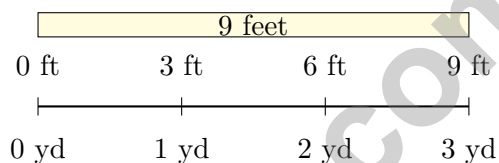
1) A school buys 2,070 crayons to pack in boxes of 18. How many boxes can be filled?

- A. 113 C. 117
 B. 115 D. 119

2) Marissa bought 3 bags with 5 apples in each bag and then ate 2 apples. Which expression shows how many apples she has left?

- A. $3 + 5 - 2$ C. $3 \times (5 - 2)$
 B. $3 \times 5 - 2$ D. $(3 + 5) \times 2$

3) How many yards are in 9 feet?

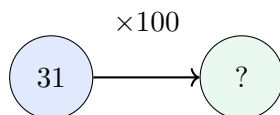


- A. 2 yards C. 4 yards
 B. 3 yards D. 6 yards

4) Evaluate: $20 - (3 \times 4)$

- A. 6 C. 17
 B. 8 D. 68

5) Use the arrow model. What is missing?



- A. 310 C. 3100
 B. 131 D. 31000



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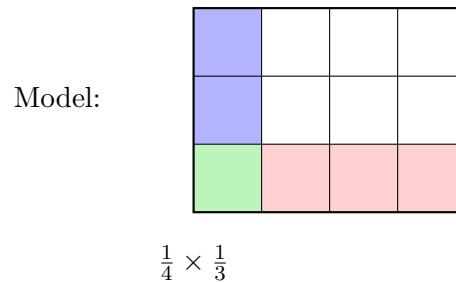
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1) Which statement does NOT correctly describe the area model?



- A. The overlap has 1 square.
- B. The product is $\frac{1}{12}$.
- C. The model shows a 4×3 grid.
- D. The denominator should be 7, not 12.
- 2) How many zeros are in the product $2,000 \times 50$?
- A. 3
- B. 4
- C. 5
- D. 6
- 3) A prism has $L = 15$ ft, $W = 4$ ft, $H = 6$ ft. Find its volume.

Record your answer in the space provided.

- 4) What is the missing denominator? $\frac{3}{5} = \frac{9}{?}$
- A. 10
- B. 12
- C. 15
- D. 18



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1) Which expression represents “subtract 8 from twice the sum of 6 and 4”?

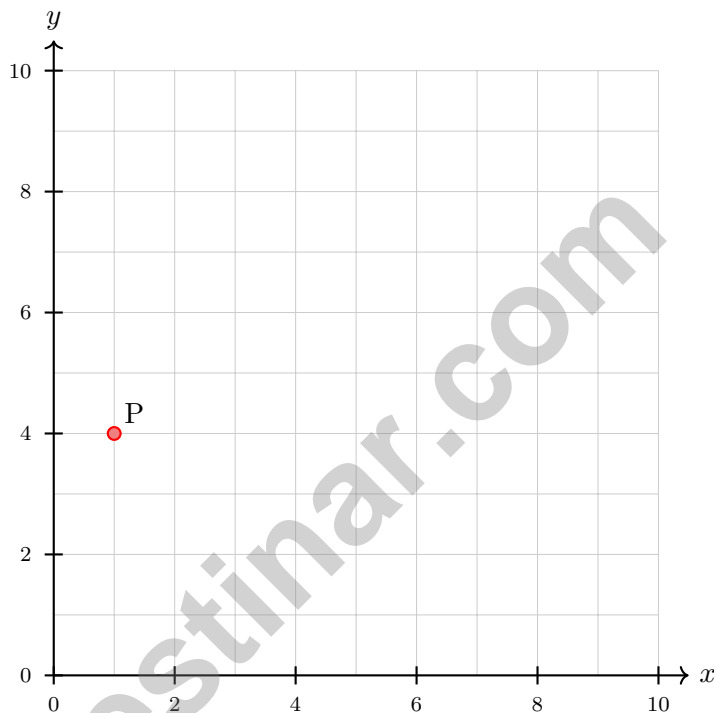
A. $8 - 2 \times (6 + 4)$

C. $2 \times 6 + 4 - 8$

B. $(8 - 2) \times (6 + 4)$

D. $2 \times (6 + 4) - 8$

2) If you plot the point (1, 4) on the coordinate plane, where will it be?



A. 1 unit right, 4 units up

C. 1 unit up, 4 units right

B. 4 units right, 1 unit up

D. 4 units right, 4 units up

3) A right triangle has angles of 90 degrees, 60 degrees, and 30 degrees. Can it be isosceles?

A. Yes, all right triangles are isosceles

C. Yes, because it is a right triangle

B. Cannot be determined

D. No, because it has no equal angles



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 Massachusetts scores.

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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- Choice D is correct.** (5.NBT.A.2) Dividing by 100 moves the decimal 2 places left: $4.5 \rightarrow 0.45 \rightarrow 0.045$.
- The correct answer is 84 cubic feet.** (5.NBT.A.2) Subtract the known part from the total: $210 - 126 = 84$ cubic feet. That is the missing part's volume.
- Choice B is correct.** (5.MD.C.3) $\text{LCM}(7,4) = 28$. $\frac{2}{7} = \frac{8}{28}$ and $\frac{3}{4} = \frac{21}{28}$. $\frac{8}{28} + \frac{21}{28} = \frac{29}{28} = 1\frac{1}{28}$.
- Choice B is correct.** (5.NF.A.1) $\frac{1}{8} \div 5 = \frac{1}{8} \times \frac{1}{5} = \frac{1}{40}$.
- Choice B is correct.** (5.MD.A.1) Convert 2.5 L to mL: $2.5 \times 1000 = 2500$ mL. The container holds exactly 2,500 mL.
- Choice D is correct.** (5.MD.C.5) Choose the operation from the story, then keep the unit with the answer. Multiply: $28.5 \times 12 = 342$ miles. This confirms the answer.
- Choice C is correct.** (5.NBT.A.2) Multiplying by 1,000 moves the decimal three places to the right: $2.8 \times 1,000 = 2,800$.
- Choice C is correct.** (5.NBT.A.2) Only $\frac{5}{7} < 1$. The others equal 1 or exceed 1, so their products would be ≥ 28 .
- The correct answer is $23\frac{1}{2}$ in.** (5.MD.B.2) Add the lengths represented by the line plot: $2 \times 3\frac{1}{2} = 7$, $3 \times 4 = 12$, and $1 \times 4\frac{1}{2} = 4\frac{1}{2}$. The total is $7 + 12 + 4\frac{1}{2} = 23\frac{1}{2}$ inches.
- Choice C is correct.** (5.OA.A.1) Evaluate inside each set of parentheses: $4 \times 5 = 20$ and $12 \div 3 = 4$. Then add: $20 + 4 = 24$.
- Choice D is correct.** (5.OA.A.1) LCD is 12. $\frac{2}{3} = \frac{8}{12}$ and $\frac{3}{4} = \frac{9}{12}$. Since $8 < 9$, $\frac{2}{3} < \frac{3}{4}$.
- Choice A is correct.** (5.NBT.B.7) Combine grids: $8 + 9 = 17$ shaded squares, which is 0.17 (regroup to 0 ones + 1 tenth + 7 hundredths).
- Choice D is correct.** (5.G.B.4) Every rectangle has opposite sides parallel and all four angles measuring 90° . The sides do not have to all be equal.
- Choice B is correct.** (5.NF.B.5) $5 \times \frac{1}{2} = 2\frac{1}{2}$. The product is halfway between 0 and 5 because the scaling factor is $\frac{1}{2}$.
- Choice C is correct.** (5.MD.C.4) $V = 5 \times 3 \times 6 = 90$ ft³.
- Choice B is correct.** (5.MD.C.4) Area = length \times width = $\frac{2}{3} \times \frac{1}{4} = \frac{2}{12} = \frac{1}{6}$ square yard.
- Choice A is correct.** (5.G.A.2) The student reversed the order of the coordinates. Instead of writing the x -coordinate first and y -coordinate second, the student switched them.
- Choice A is correct.** (5.NF.A.1) Convert to sixths: $5\frac{2}{3} = 5\frac{4}{6}$. Borrow 1 to get $4\frac{10}{6} - 1\frac{5}{6} = 3\frac{5}{6}$.
- Choice B is correct.** (5.NF.A.1) $\frac{1}{6} \times \frac{1}{2} = \frac{1}{12}$ (unit-fraction product).
- Choice C is correct.** (5.NF.B.4) Subtract child revenue from adult revenue for each month and compare the decimal differences: January = $4.0 - 2.5 = 1.5$; February = $3.5 - 2.0 = 1.5$; March = $4.8 - 3.0 = 1.8$; April = $5.0 - 4.2 = 0.8$. The greatest difference is 1.8 million in March.
- Choices A, B are correct.** (5.NF.A.2) $\frac{3}{4} + \frac{1}{2} = 1\frac{1}{4}$, so A is true. Since $1\frac{1}{4}$ is more than 1, B is also true. C multiplies; D ignores the second trip.
- Choice C is correct.** (5.NF.A.2) $4\frac{2}{3} \approx 5$ and $5\frac{1}{4} \approx 5$. So $4\frac{2}{3} + 5\frac{1}{4} \approx 5 + 5 = 10$.
- Choice D is correct.** (5.NF.A.2) Volume = $11 \times 11 \times 11 = 1331$ cubic centimeters.
- Choice B is correct.** (5.MD.C.4) A square is a rectangle, a rhombus, and a parallelogram.
- Choice C is correct.** (5.NF.B.6) One yard has 5 fifth-yard pieces. $30 \div \frac{1}{5} = 30 \times 5 = 150$ wristbands.
- Choice C is correct.** (5.NF.B.7) $5 \div \frac{1}{3} = 5 \times 3 = 15$. She uses 15 batches.
- Choice A is correct.** (5.NBT.A.2) A power of 10 tells how many factors of 10 to use. $25 \times 10^5 = 25 \times 100,000 = 2,500,000$. This confirms the answer.
- Choice A is correct.** (5.NBT.A.2) The decimal 0.47 has two digits after the decimal point, so it represents 47 hundredths: $0.47 = \frac{47}{100}$.
- Choice A is correct.** (5.NBT.A.3) $2\frac{1}{3} = \frac{7}{3}$ and $3\frac{1}{2} = \frac{7}{2}$. Multiply: $\frac{7}{3} \times \frac{7}{2} = \frac{49}{6} = 8\frac{1}{6}$ square feet.
- Choice C is correct.** (5.MD.C.5) Use the rectangular-prism volume formula: $10 \times 3 \times 6 = 180$. So the volume is 180 cubic feet.



Dear Hero of This Story,

◇ Once upon a time, there was a brave Grade 5 student who decided to take 9 practice tests. At first, the problems were tough. But the student kept showing up, kept trying, and kept learning. Slowly, the tough problems became easier. The student's confidence grew. By the time the 9th test was finished, that student had become the hero of their own math story. That student is you. ◇

★ **Storytellers know:** every great story has a hard middle. The hard middle is where the hero grows. You've lived your hard middle, and now your story is heading toward a strong ending: a confident test day. ★

Your Hero's Toolkit

- **Brave Heart:** You face hard problems instead of running.
- **Sharp Mind:** You think carefully before you act.
- **Steady Hand:** You write neatly and check your work.
- **Kind Spirit:** You're patient with yourself when you make mistakes.

Storyteller's tip: when you sit down on test day, remember the hero you've become. The chapters before this moment have made you stronger. Now, write your best chapter yet.

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

Reza Nazari & Jay Daie

Your Math Storyteller (The Best Pages Are Ahead)

PRACTICE MORE. ACHIEVE MORE.

Give your child the edge they need to excel in **Grade 5 Math!** This book includes **9 full-length** practice tests designed to build confidence, sharpen skills, and improve test performance.

9

**FULL-LENGTH
PRACTICE
TESTS**

- ✓ Realistic.
- ✓ Rigorous.
- ✓ Results-Driven.

More practice today for a **stronger** tomorrow.



THIS BOOK HELPS YOUR CHILD:



Build Confidence

Familiar, focused practice reduces anxiety and boosts self-belief.



Strengthen Skills

Reinforces key math concepts through high-quality, standards-aligned questions.



Improve Test Readiness

Full-length tests help students understand test format, pacing, and question types.



Track Progress

Identify strengths and target areas with purposeful practice.



Achieve Success

Better preparation leads to higher scores and bright futures.

COVERS ALL ESSENTIAL TOPICS

- ✓ Whole Numbers & Operations
- ✓ Fractions & Decimals
- ✓ Algebraic Thinking
- ✓ Geometry
- ✓ Measurement & Data
- ✓ Graphing & Data Analysis
- ✓ Number Patterns
- ✓ Word Problems
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- ✓ Perimeter, Area & Volume
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