

# 10 COMPLETE

## Massachusetts

# MCAS

# GRADE 5

# MATH

# PRACTICE TESTS

Standards-Based Review with  
Mixed Practice and Detailed Answer Key



### 10 Complete Practice Tests

Build confidence and test readiness



### Standards-Based Review

Covers key Grade 5 math standards



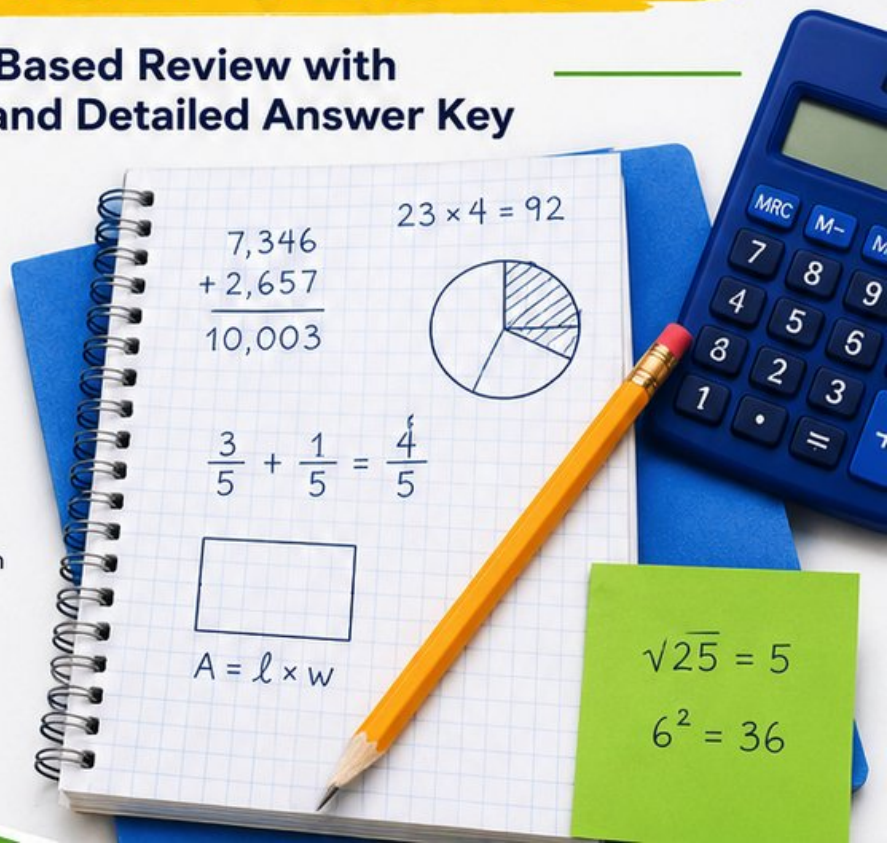
### Mixed Practice

Variety of question types to strengthen skills



### Detailed Answer Key

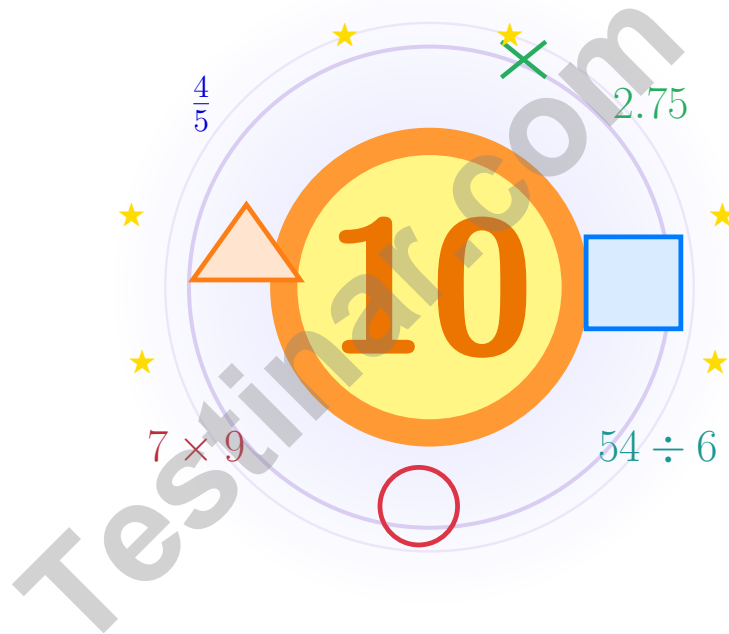
Step-by-step explanations for every question



PREPARE.  
PRACTICE.  
SUCCEED!

# 10 Massachusetts MCAS Grade 5 Math Practice Tests

*Bright review, thoughtful practice, and steady confidence for Grade 5*



Ten full tests, a focused quick review, and student-friendly support that keeps practice clear and encouraging.

**Jay Daie and Reza Nazari**



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# Welcome!

This book is a place to practice bravely and think clearly

## Dear Grade 5 Mathematician

This book gives you ten chances to read carefully, solve thoughtfully, and build steady math confidence. Some problems will feel friendly right away. Some will take more patience. Both kinds help you grow.

The goal is not to feel perfect before you begin. The goal is to practice honest effort, learn from corrections, and notice how much stronger your thinking becomes over time.

### Read

Slow down and understand the task.

### Solve

Show clear steps and good choices.

### Learn

Use mistakes as clues for what comes next.

**A strong habit from the start:** keep your work neat, estimate when it helps, write units carefully, and do not let one hard problem decide your mood for the whole page.



# How to Use This Book

A simple routine that turns practice into real progress

## Step 1

**Warm up with the quick review.**

Spend a few minutes refreshing the ideas before the test begins.

## Step 2

**Take one full practice test.**

Work in a calm spot and aim for careful thinking before speed.

## Step 3

**Check your work honestly.**

Circle missed questions and notice which skills need another look.

## Step 4

**Fix and reflect.**

Read the explanation, repair the work, and bring that lesson into the next test.



**A Good 10-Week Rhythm**

<b>Week 1</b>	Take Test 1 and notice your starting strengths.
<b>Week 2</b>	Take Test 2 and slow down on word problems.
<b>Week 3</b>	Take Test 3 and sharpen multiplication and division checks.
<b>Week 4</b>	Take Test 4 and focus on fractions and decimals.
<b>Week 5</b>	Take Test 5 and watch your labels and units closely.
<b>Week 6</b>	Take Test 6 and practice calmer pacing.
<b>Week 7</b>	Take Test 7 and compare your habits with the earlier weeks.
<b>Week 8</b>	Take Test 8 and focus on tidy, checkable work.
<b>Week 9</b>	Take Test 9 and compare your progress with the way you worked in the earlier weeks.
<b>Week 10</b>	Take Test 10 and finish with steady, confident effort while using every strong habit you built.



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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) A class collects donations. Monday:  $\frac{1}{3}$  of target, Tuesday:  $\frac{1}{4}$  of target. Total collected?

- A.  $\frac{7}{12}$
- B.  $\frac{5}{12}$

- C.  $\frac{1}{7}$
- D.  $\frac{2}{7}$

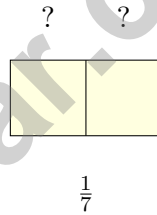
2) Which pair shows products that are equal?

$6 \times \frac{3}{3}$	$6 \times 1$
------------------------	--------------

Are these equal?

- A. Cannot be determined
- B. No, first is bigger
- C. No, second is bigger
- D. Yes, both equal 6

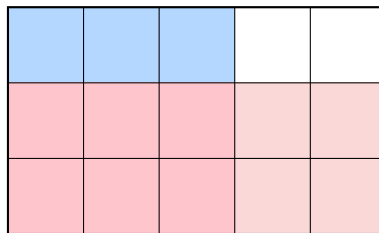
3) The diagram shows a bar representing  $\frac{1}{7}$  divided into 2 equal parts. What is the value of each part?



- A.  $\frac{1}{14}$
- B.  $\frac{2}{7}$

- C.  $\frac{1}{5}$
- D.  $\frac{7}{2}$

4) A rectangular mat is  $\frac{3}{5}$  yard by  $\frac{2}{3}$  yard. What is the exact area of the mat?

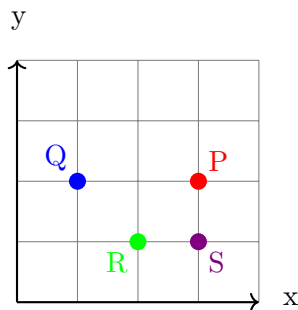


- A.  $\frac{2}{5}$  square yard
- B.  $\frac{1}{5}$  square yard

- C.  $\frac{3}{5}$  square yard
- D.  $\frac{5}{6}$  square yard



5) On the coordinate plane, which point is located 3 units right and 2 units up from the origin?



- |                               |                               |
|-------------------------------|-------------------------------|
| <input type="checkbox"/> A. S | <input type="checkbox"/> C. R |
| <input type="checkbox"/> B. Q | <input type="checkbox"/> D. P |

6)

Shape	Sides	Must have all sides equal?	All 90°?
Square	4	✓	✓
Rectangle	4	—	✓
Rhombus	4	✓	—

A student says a rectangle is always a square. Use properties to explain why this is FALSE.

- |   |  |
|---|--|
| <input type="checkbox"/> A. Rectangles have right angles but not all sides are necessarily equal. | <input type="checkbox"/> C. Squares cannot have right angles.    |
| <input type="checkbox"/> B. Rectangles only have two sides.                                       | <input type="checkbox"/> D. Rectangles are never quadrilaterals. |

7) Two items cost \$5.30 and \$5.03. Which costs more?

- |                                    |   |
|------------------------------------|---|
| <input type="checkbox"/> A. \$5.30 | <input type="checkbox"/> C. Equal cost  |
| <input type="checkbox"/> B. \$5.03 | <input type="checkbox"/> D. Cannot tell |



## Grade 5 Mathematics Reference Materials

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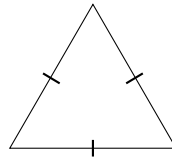
1 day = 24 hours (hr)    1 year = 52 weeks



1) A classroom is 9 meters long, 8 meters wide, and 3 meters high. What is the volume of air in the classroom?

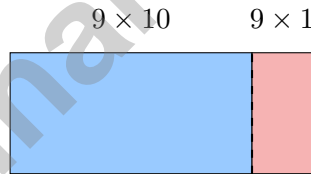
- A. 20 cubic meters
- B. 108 cubic meters
- C. 156 cubic meters
- D. 216 cubic meters

2) The matching tick marks show all three sides are equal. Looking at the diagram, identify the triangle type based on both sides and angles.



- A. Scalene acute
- B. Isosceles acute
- C. Equilateral acute
- D. Right isosceles

3) Compare:  $9 \times 11$    $9 \times 10 + 9$



- A. >
- B. <
- C. =
- D. Cannot tell

4) Population fact: A town has 1.25 thousand people. How many people is that in total?

- A. 125
- B. 125000
- C. 12500
- D. 1250



40) Which statement is FALSE?

A.  $0.301 < 0.31$

B.  $0.401 > 0.14$

C.  $0.105 > 0.510$

D.  $0.807 < 0.87$

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### End of Practice Test

Nice work. Pause, breathe, and check your answers with care.



Scan me

Grade 5 Mathematics

10

Questions: 40 Duration: No time limit

Calculator Policy: Calculators are not allowed



## 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

- 1) **Choice A is correct.** (5.NF.A.2)  $\frac{1}{3} + \frac{1}{4}$ : common denominator 12.  $\frac{1}{3} = \frac{4}{12}$  and  $\frac{1}{4} = \frac{3}{12}$ . Total:  $\frac{7}{12}$ .
- 2) **Choice D is correct.** (5.NF.B.5)  $\frac{3}{3} = 1$ , so  $6 \times \frac{3}{3} = 6 \times 1 = 6$ .
- 3) **Choice A is correct.** (5.NF.B.7) The bar shows one seventh split into 2 equal parts. Each part is half of  $\frac{1}{7}$ , so  $\frac{1}{7} \div 2 = \frac{1}{14}$ .
- 4) **Choice A is correct.** (5.MD.C.5) Multiply the side lengths to find the area:  $\frac{3}{5} \times \frac{2}{3} = \frac{6}{15} = \frac{2}{5}$  square yard.
- 5) **Choice D is correct.** (5.G.A.2) Move 3 units right for the x-coordinate and 2 units up for the y-coordinate. Point P is at (3, 2), so P matches the description.
- 6) **Choice A is correct.** (5.G.B.4) A rectangle is defined by having all right angles and opposite sides equal. A square must have all right angles AND all four sides equal. Not all rectangles have all equal sides.
- 7) **Choice A is correct.** (5.NBT.B.7)  $5.30 > 5.03$  because 3 tenths  $>$  0 tenths. The first item costs more.
- 8) **Choice B is correct.** (5.NBT.B.7) Multiplying by 10 shifts the decimal point 1 place to the right. For example,  $3.4 \times 10 = 34$ .
- 9) **Choice B is correct.** (5.NF.B.5)  $35 \times \frac{3}{7} = 15$  km. Since  $\frac{3}{7} < 1$ , the shortcut is much shorter than the original road.
- 10) **Choice A is correct.** (5.MD.C.5) The base area is 56 square centimeters. Since  $336 \div 56 = 6$ , the water is 6 cm deep.
- 11) **Choice D is correct.** (5.MD.C.4) A cube with edge 3:  $3 \times 3 \times 3 = 27$  unit cubes.
- 12) **Choice A is correct.** (5.MD.C.4)  $V = 10 \times 8 \times 6 = 480$  in<sup>3</sup>.
- 13) **Choice D is correct.** (5.NF.B.6) The one-fifth piece is the amount being shared into 2 equal parts. So the matching division equation is  $\frac{1}{5} \div 2 = ?$ .
- 14) **Choice B is correct.** (5.NF.B.6) Divide a whole number by a unit fraction:  $6 \div \frac{1}{4} = 6 \times 4 = 24$  pieces.
- 15) **The correct answer is 9 ft<sup>3</sup>.** (5.MD.C.5) Box A has volume  $8 \times 4 \times 3 = 96$  cubic feet. Box B has volume  $7 \times 5 \times 3 = 105$  cubic feet, so Box B is greater by 9 cubic feet.
- 16) **Choice A is correct.** (5.MD.C.3) Find each part first: Prism A is  $8 \times 2 \times 5 = 80$  cubic centimeters, and Prism B is  $3 \times 3 \times 3 = 27$  cubic centimeters. Because the parts do not overlap, add them:  $80 + 27 = 107$  cubic centimeters.
- 17) **Choice B is correct.** (5.MD.C.4) Volume =  $9 \times 4 \times 6 = 36 \times 6 = 216$  cubic units.
- 18) **Choice B is correct.** (5.OA.B.3) Compare matching figures:  $2 = 2 \times 1$ ,  $8 = 2 \times 4$ ,  $14 = 2 \times 7$ , and  $20 = 2 \times 10$ . Pattern B has twice as many dots as Pattern A.
- 19) **Choice B is correct.** (5.NBT.A.2)  $19 \times 100 = 1900$ . Append two zeros to 19.
- 20) **Choice D is correct.** (5.OA.B.3) Compare the matching second numbers:  $6 = 2 \times 3$ ,  $12 = 2 \times 6$ , and  $18 = 2 \times 9$ . Pattern Y is always double Pattern X.
- 21) **Choice D is correct.** (5.MD.C.3) Base:  $6 \times 6 = 36$  sq. units per layer. With 3 layers:  $36 \times 3 = 108$  cubic units.
- 22) **Choices A, B, D are correct.** (5.NBT.B.7) Line up decimal points and add. A gives 0.80, B gives 4.00, and D gives 4.00. C should be 1.10.
- 23) **Choice B is correct.** (5.NBT.A.2) Dividing by a power of 10 shifts the value to a smaller place.  $5,600 \div 100 = 56$  books per classroom. This confirms the answer.
- 24) **The correct answer is 70.** (5.NBT.A.2) Multiplying by 1,000 moves the decimal point three places right:  $0.07 \rightarrow 70$ .
- 25) **Choice C is correct.** (5.G.A.1) To find the highest point, look for the largest y-coordinate. Point N at (2, 9) has y-coordinate 9, which is the largest.
- 26) **The correct answer is 12.** (5.NF.B.6) Find  $\frac{2}{5}$  of 30 by multiplying. One fifth of 30 is 6, and two fifths is  $2 \times 6 = 12$ .
- 27) **Choice A is correct.** (5.NF.B.4)  $4 \times \frac{5}{12} = \frac{20}{12} = \frac{5}{3} = 1\frac{2}{3}$  (simplified by dividing by 4).
- 28) **Choice C is correct.** (5.OA.A.2) Choice C translates correctly: the product of 2 and 8 is  $2 \times 8$ , and 5 more gives  $2 \times 8 + 5$ . The other pairs change the grouping or order.
- 29) **Choice B is correct.** (5.G.A.2) The bottom side connects (1, 2) and (5, 2), which are on the same horizontal line. The length is  $5 - 1 = 4$  units.



## Captain of Your Own Math Plane,

◇ 10 practice tests behind you. That's many flights logged in your math airplane. You've handled clear weather, turbulence, tricky landings, and long routes. You're a real pilot now. ◇

★ **Pilots know:** a good pre-flight check makes for a good flight. Before each test problem, do your check: read the question, look at the numbers, pick a strategy. That short check makes the rest of the flight smooth. ★

### Flight Crew Skills

- **Pre-flight Check:** CONSISTENT! You read questions carefully.
- **Navigation:** STRONG! You pick a clear strategy.
- **Steady Flight:** STEADY! You stay calm through long tests.
- **Landing:** SHARP! You always check your final answer.

**Pilot's tip:** on test day, don't fly the whole flight in your head before takeoff. Just take off. Then handle one problem at a time. Trust your training. You've earned your wings.

If you want to share a proud moment or ask a question, please email me at [jay@testinar.com](mailto:jay@testinar.com). I'd love to hear from you!

**Jay Daie**

Your Math Pilot (Clear Skies Ahead)

# PRACTICE TODAY. MASTER TOMORROW.

Give your child the confidence to excel in **Grade 5 Math!**  
This book includes **10 complete practice tests** designed to build strong skills, improve test readiness, and achieve success.



**10**  
COMPLETE  
PRACTICE  
TESTS

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### Build Confidence

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### 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

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## COVERS ALL ESSENTIAL TOPICS

- ✓ Whole Numbers & Operations
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- ✓ Word Problems
- ✓ Ratio & Proportion
- ✓ Perimeter, Area & Volume
- ✓ And More!



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