

# 4

# Massachusetts

# MCAS

## Grade 3

# MATH

## PRACTICE TESTS

### Standards-Aligned Practice



#### STANDARDS-ALIGNED

Practice to build skills and boost confidence



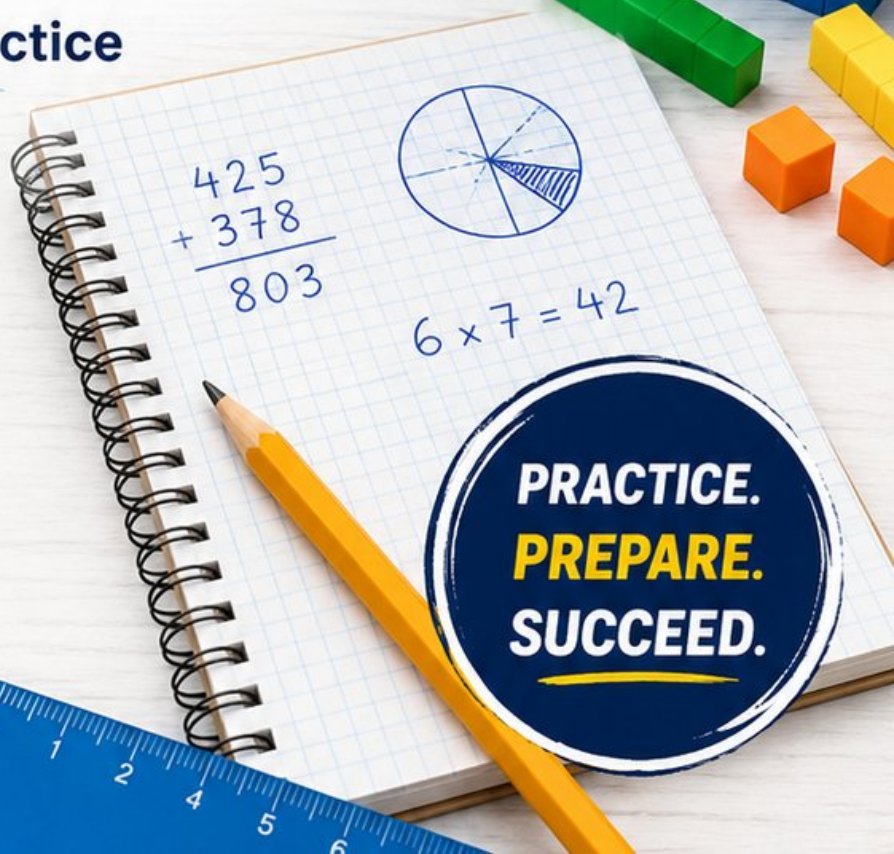
#### 4 FULL-LENGTH TESTS

Realistic questions to prepare for test day



#### ANSWER KEYS & EXPLANATIONS

Detailed solutions to learn and improve



# 4 Massachusetts MCAS Grade 3 Math Practice Tests

*Standards-Aligned Review with Mixed Practice and Answer Key*



Four focused 30-question missions for Grade 3 math: number facts, fractions, measurement, data, area, shapes, answer keys, and clear explanations for every item.

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# Welcome to the Massachusetts Math Launch

Four missions, careful work, and a stronger Grade 3 thinker



Read the mission. Show the work. Check the answer. Launch again.

## To the Grade 3 Mission Leader

This book is a four-mission practice launch for the Massachusetts MCAS. Each test gives you a fresh chance to multiply, divide, read graphs, compare fractions, measure, find area, and explain math in a way someone else can follow.

Massachusetts has historic roads, harbor views, and classrooms where clear reasoning matters. Good math uses the same habit: pause, check the details, and move forward with a steady plan.

### Notice

Find the numbers, units, and question before choosing a path.

### Model

Draw an array, number line, table, or quick equation.

### Verify

Ask whether your answer fits the story and the unit.

**Launch promise:** I will slow down at the important moments, show the work I can, and use every miss as a clue for the next mission.

# How to Use This Book

A four-mission routine for steady Grade 3 growth

## 1. Warm Up the System

Read the review pages first. Remind your brain how equal groups, fractions, clocks, graphs, and area models work.

## 2. Fly One Mission

Take one complete 30-question test. Keep your work neat enough that you can check it later.

## 3. Review the Flight

Use the answer key, then pause. A wrong answer is useful when you can name what happened.

## 4. Repair and Relaunch

Rework a few missed questions before starting the next test. The repair step is where the score begins to move.

### A Four-Session Plan

<b>Session 1</b>	Take Test 1 and mark the topics that need attention.
<b>Session 2</b>	Take Test 2 and focus on showing every step clearly.
<b>Session 3</b>	Take Test 3 and watch for units, labels, and two-step problems.
<b>Session 4</b>	Take Test 4 and finish with calm, careful checking.

**Best mission habit:** After checking answers, write one sentence: “Next time I will pay attention to \_\_\_\_\_.”



# Test Overview

## What each Grade 3 math mission asks you to do

Each practice test has 30 questions. Across four tests, you will practice the kind of Grade 3 math thinking used on the Massachusetts MCAS: reading carefully, choosing a strategy, doing accurate computation, and explaining enough work to make your answer clear.

### Multiple Choice

Look for the best answer. Estimate first when you can, cross out choices that do not fit, and reread the question before you choose.

### Open Response

Write the answer and show the reason. A good Grade 3 response may use a drawing, equation, table, number line, or a few clear words.

### Math Ideas Inside the Four Tests

- multiplication, division, arrays, missing factors, and two-step word problems
- place value, rounding, addition, subtraction, and multiplying by tens
- unit fractions, number lines, equivalent fractions, and comparing fractions
- time, mass, liquid volume, picture graphs, bar graphs, and line plots
- area, perimeter, unit squares, rectangles, and shape categories

**What strong MCAS work looks like:** the answer matches the question, the units make sense, and the work is clear enough to check.



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& answers

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4) Sam buys 5 packs of stickers. Each pack has 6 stickers. How many stickers does Sam buy?

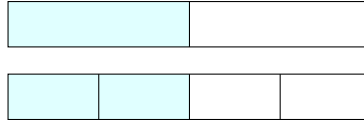
A. 11

C. 35

B. 25

D. 30

5) Two identical length strips. Strip P has 2 equal parts with 1 shaded. Strip Q has 4 equal parts with 2 shaded. Which statement is correct?



Strip P:  $\frac{1}{2}$

Strip Q:  $\frac{2}{4}$

A. Strip Q has more.

C. They shade the same amount.

B. Strip P has more.

D. Cannot be compared.

6) Which pair of equations shows the commutative property with 3, 4, and 12?

A.  $3 + 4 = 7$  and  $4 + 3 = 7$

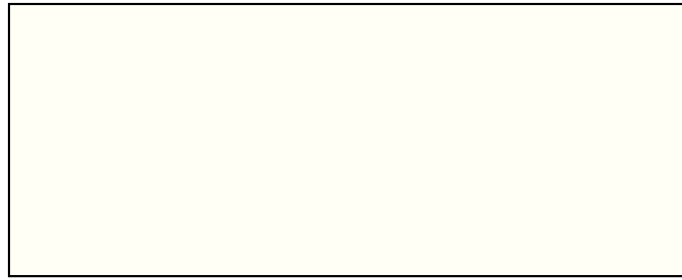
C.  $12 - 3 = 9$  and  $12 - 4 = 8$

B.  $3 \times 3 = 9$  and  $4 \times 3 = 12$

D.  $3 \times 4 = 12$  and  $4 \times 3 = 12$



4 yards



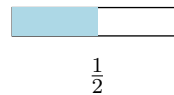
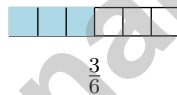
10 yards

7)

A rectangular field measures 10 yards by 4 yards. Find the area.



8) Look at the fraction bars. Are  $\frac{3}{6}$  and  $\frac{1}{2}$  equivalent?



A. Yes, both show half

B. No,  $\frac{3}{6}$  is larger

C. No,  $\frac{1}{2}$  is larger

D. Cannot tell from the bars



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1) Which fraction is NOT equivalent to  $\frac{3}{4}$ ?

A.  $\frac{6}{8}$

B.  $\frac{9}{12}$

C.  $\frac{4}{8}$

D.  $\frac{12}{16}$

2) What is  $8 \times 20$ ?

 A. 80 (forgot to include the 8 in decomposition) C. 160 B. 88 (added 8 and 80) D. 1600 (added two zeros)

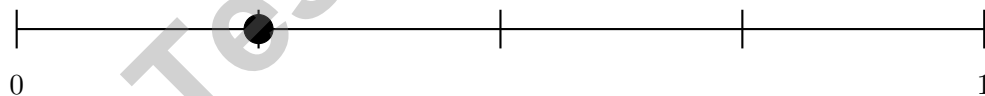
3) Amira has 15 beads. She wants to make 3 necklaces with equal beads. She knows  $3 \times 5 = 15$  helps her. How many beads in each necklace?

 A. 3 beads C. 15 beads B. 18 beads D. 5 beads

4) A rectangle has a width of 3 feet and a length of 8 feet. The rectangle has 8 rows with 3 unit squares in each row. Find the area by adding:  $3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 = ?$

 A. 11 sq ft C. 24 sq ft B. 16 sq ft D. 32 sq ft

5) A number line shows the distance from 0 to 1 split into 4 equal parts. Where is  $\frac{1}{4}$  located?

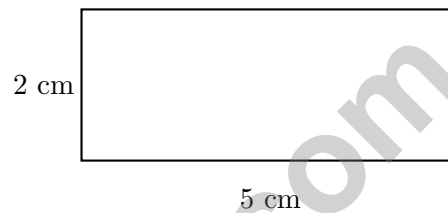
 A. At the first tick mark C. At the third tick mark B. At the second tick mark D. At the fourth tick mark

6) Ben is building a rectangular frame that is 8 units long and 4 units wide. What is the area he needs to fill?

- A. 12 sq units                       C. 24 sq units  
 B. 32 sq units                       D. 64 sq units

7)  $\frac{1}{3} = \frac{2}{?}$ . What is the missing denominator?

- A. 4                                       C. 8  
 B. 6                                       D. 9



8) What is the area of the rectangle shown?

- A. 7 sq cm                               C. 12 sq cm  
 B. 14 sq cm                               D. 10 sq cm

9) Ben saves \$7 each week. After a certain number of weeks, he has saved \$63. How many weeks did he save?

$$\square \times 7 = 63$$

- A. 10                                       C. 7  
 B. 8                                       D. 9

10) Ava buys two bags of rice. Bag A weighs 1000 g and Bag B weighs 800 g. What is the total mass in grams?

- A. 800 g                                       C. 1800 g  
 B. 1000 g                                       D. 2000 g



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## Practice Test Answer Keys

**How to use this section with a Grade 3 student:**

1. check the answer first
2. mark questions to try again
3. rework the problem before reading the full explanation

**A calm correction routine turns every missed item into useful practice.**

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## Practice Test Answers and Explanations

### Practice Test 1 Answers and Explanations

- 1) **Choice C is correct.** **(3.OA.D.8)** Step 1: Add total stickers:  $24 + 12 = 36$  stickers. Step 2: Divide into 4 groups:  $36 \div 4 = 9$  stickers per group. (Choice D is step 1 only.)
- 2) **Choice C is correct.** **(3.MD.B.4)** At  $3\frac{1}{2}$  inches, there are 4 X's.
- 3) **Choice D is correct.** **(3.NBT.A.2)** Ones:  $8 + 4 = 12$  (write 2, carry 1). Tens:  $7 + 5 + 1 = 13$  (write 3, carry 1). Hundreds:  $4 + 2 + 1 = 7$ . Answer: 732.
- 4) **Choice D is correct.** **(3.OA.A.3)** Multiply: 5 packs  $\times$  6 stickers per pack = 30 stickers.
- 5) **Choice C is correct.** **(3.NF.A.3a)**  $\frac{1}{2} = \frac{2}{4}$  because both represent one-half of the strip.
- 6) **Choice D is correct.** **(3.OA.B.5)** The commutative property shows that switching the factors in a multiplication gives the same product:  $3 \times 4 = 4 \times 3 = 12$ .
- 7) **The correct answer is 40 square yards.** **(3.MD.C.7b)** Area = length  $\times$  width, so  $10 \times 4 = 40$  square yards.
- 8) **Choice A is correct.** **(3.NF.A.3b)** Both bars show the same shaded length.  $\frac{3}{6} = \frac{1}{2}$  because  $\frac{1 \times 3}{2 \times 3} = \frac{3}{6}$ .
- 9) **Choice C is correct.** **(3.MD.C.7d)** Vertical:  $7 \times 6 = 42$  sq units. Horizontal:  $8 \times 3 = 24$  sq units. Total:  $42 + 24 = 66$  sq units.
- 10) **Choice D is correct.** **(3.OA.A.1)** The repeated addition  $2 + 2 + 2 + 2$  has four 2's added, so it equals  $4 \times 2 = 8$ .
- 11) **Choice D is correct.** **(3.NF.A.3c)** 6 thirds equals 2 wholes. Each whole has 3 thirds, so  $6 \div 3 = 2$  wholes.
- 12) **The correct answer is  $\frac{2}{3}$ .** **(3.NF.A.1)**  $\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$ .
- 13) **Choice A is correct.** **(3.MD.C.7c)**  $35 = 7 \times 5$  and  $21 = 7 \times 3$ , so total is  $7 \times (5 + 3) = 7 \times 8 = 56$ .
- 14) **Choices A and D are correct.** **(3.NF.A.3)**  $\frac{2}{8}$  and  $\frac{1}{4}$  both name one-fourth of a whole. The other choices are not equivalent to  $\frac{1}{4}$ .
- 15) **Choice D is correct.** **(3.OA.A.2)** If  $18 \div ? = 3$ , then  $? = 6$  because  $6 \times 3 = 18$ . Check:  $18 \div 6 = 3$  is correct.
- 16) **Choice D is correct.** **(3.NBT.A.3)**  $4 \times 20 = 4 \times (2 \times 10) = (4 \times 2) \times 10 = 8 \times 10 = 80$ . This uses associative property: you break 20 into  $2 \times 10$ , multiply the single digits first, then multiply by 10.
- 17) **Choice A is correct.** **(3.NF.A.2a)** The first of four equal parts is  $\frac{1}{4}$ .
- 18) **Choice C is correct.** **(3.MD.B.3)** Rio:  $8 \times 3 = 24$ . Alex:  $5 \times 3 = 15$ . Fewer:  $24 - 15 = 9$ .
- 19) **Choice D is correct.** **(3.OA.B.6)** In a fact family,  $45 \div 5 = 9$  and  $45 \div 9 = 5$ . Division reverses multiplication.
- 20) **Choice C is correct.** **(3.MD.A.1)**  $4:07 + 18 \text{ min} = 4:25 \text{ PM}$ .
- 21) **Choice B is correct.** **(3.NF.A.3d)** Comparing the shaded areas: two thirds covers more of the bar than one half does.
- 22) **The correct answer is 18 sq cm.** **(3.MD.C.7)** Area =  $9 \times 2 = 18$  square centimeters. You can multiply the side lengths or imagine 9 rows of 2 unit squares.
- 23) **Choice D is correct.** **(3.NF.A.2b)** Point  $U$  is at position 1 on the number line. Since the line is divided into fourths, this position is the 4th fourth-mark:  $\frac{4}{4} = 1$ .
- 24) **Choice C is correct.** **(3.MD.A.2)** Add:  $1000 + 500 + 500 = 2000$  mL.
- 25) **Choice B is correct.** **(3.G.A.1)** A rectangle has 4 vertices where the sides meet at corners. A circle has no vertices because it has no straight sides or corners.
- 26) **Choice C is correct.** **(3.MD.C.5a)** A unit square with side length 1 cm has area  $1 \text{ cm} \times 1 \text{ cm} = 1 \text{ cm}^2$ .
- 27) **Choice B is correct.** **(3.MD.C.5)**  $4 \times 5 = 20$  square units. The other options give:  $2 \times 8 = 16$ ,  $3 \times 6 = 18$ ,  $2 \times 9 = 18$ .
- 28) **Choice A is correct.** **(3.NBT.A.1)** Numbers from 450 to 549 round to 500 when rounded to the nearest 100. So yes, any number that rounds to 500 must be at least 450.
- 29) **Choice B is correct.** **(3.MD.C.5b)**  $9 \times 7 = 63$  unit squares cover the tile.
- 30) **Choice B is correct.** **(3.MD.C.7a)** Playground:  $6 \times 5 = 30$  tiles. Real-world context.

### Practice Test 2 Answers and Explanations



From a Friend Who Believes in You

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**Hi, Friend!**

◇ I just want to say something important: I am proud of you. You did 4 full practice tests. That takes time, hard work, and heart. ◇

★ **Friendly truth:** a test is just one part of your math journey. You are SO much more than a score. The work you did is the real win! ★

**What I Want You to Know**

- **You are smart.** Every test you finished proves it.
- **You are brave.** You tried hard problems.
- **You are growing.** Mistakes taught you new things.
- **You are ready.** The skills are inside you.

**One more thing:** on test day, take a deep breath. Smile. Remember that someone (me!) believes in you. You can do this!

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 Friend

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