

7

Massachusetts

MCAS

Grade 3 MATH

PRACTICE TESTS

Standards-Aligned Practice with
Review, Answer Keys, and Explanations



7 Full-Length
Practice Tests



Standards-Aligned
Math Practice



Detailed Answer Keys
and Explanations



Build Confidence.
Achieve Success.

PREPARE
PRACTICE
SUCCEED



$4 \times 6 = 24$

$2 + 3 = 5$



7 Massachusetts MCAS Grade 3 Math Practice Tests

Standards-Aligned Practice with Review, Answer Keys, and Explanations



Seven complete 30-question practice trails for Grade 3 math: operations, fractions, measurement, data, area, shapes, answer keys, and clear explanations for every item.

Jay Daie and Reza Nazari



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Welcome to the Seven Math Trails

Seven full tests, seven fresh chances, and one braver Grade 3 thinker



Read the trail. Mark the clues. Solve with care.

To the Grade 3 Math Trail Leader

This book gives you seven complete practice trails for the Massachusetts MCAS. Each trail is a full 30-question test, so students can practice accuracy, stamina, and clear explanations over time.

Massachusetts has historic streets, coastal science, town greens, train routes, and curious classrooms, where careful steps matter. Strong math follows that same path: notice the question, choose a tool, show the work, and turn clues into a clear strategy.

Scout

Find what the problem is asking before you calculate.

Solve

Pick an equation, model, array, graph, or number line.

Prove

Check the answer and explain the thinking clearly.

Seven-trail promise: I will work with patience, use my scratch space wisely, and let every correction make my next test stronger.

How to Use This Book

A seven-trail routine for steady Grade 3 growth

Use one practice trail at a time. The goal is not to rush through more pages. The goal is to finish, check, repair, and bring a stronger habit to the next test. For Massachusetts students, each trail moves through historic streets, coastal science, town greens, train routes, and curious classrooms: steady, alert, and ready for the next clue.

1. **Preview the tools.** Skim the reference page before each test.
2. **Take one test.** Work steadily and mark problems that need another look.
3. **Check the key.** Use the compact answer boxes first.
4. **Study explanations.** Read missed items and lucky guesses.
5. **Redo three problems.** Rewrite the work cleanly without copying.
6. **Name one habit.** Choose a focus such as labels, facts, fractions, or checking.
7. **Start the next trail.** Bring that habit into the next full test.

Best review habit: A missed problem is a trail marker. It shows where to slow down, look again, and choose a better step.



What Is Inside?

Seven complete practice tests with review support

Part	What You Do	Why It Helps
Practice Tests 1–7	Solve seven different 30-question tests.	Build stamina and see Grade 3 skills mixed together.
Reference Materials	Review measurement and time facts before each test.	Keep common tools close without turning pages backward.
Answer Keys	Check each answer in compact boxes.	Find mistakes quickly without losing your place.
Explanations	Read why each answer works.	Turn missed items into a clear next step.
Standards Reference	See how Massachusetts Grade 3 standards connect to practice.	Understand the skills behind the questions.

Each test has 26 multiple-choice questions, 1 select-all question, and 3 open-ended questions. This gives students practice with quick decisions, careful reading, and short written math answers for the Massachusetts MCAS path.



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& answers

Table of Contents

★ Practice Test 1	_____	14
★ Practice Test 2	_____	25
★ Practice Test 3	_____	37
★ Practice Test 4	_____	50
★ Practice Test 5	_____	63
★ Practice Test 6	_____	75
★ Practice Test 7	_____	88
Practice Test Answer Keys	_____	99
Practice Test Answers and Explanations	_____	104

1) Noah is making a rectangular picture frame. The frame is 9 inches wide and 7 inches tall. What is the area inside the frame?

A. 32 sq in

C. 16 sq in

B. 56 sq in

D. 63 sq in

2) A square is covered by 6 rows of 6 unit squares. What is its area?



3) What is 7×60 ?

A. 67

C. 420

B. 76

D. 4800

4) Which split could show $6 \times (4 + 3) = (6 \times 4) + (6 \times 3)$?

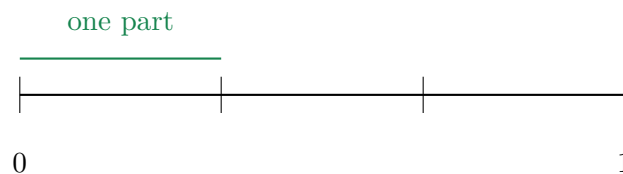
A. Two rectangles share a 6-unit side; the other sides are 4 and 3

C. One rectangle is not split into parts

B. Two rectangles have no matching side lengths

D. One rectangle is split into three unrelated parts

5) Look at this number line divided equally from 0 to 1. What is the unit fraction?



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

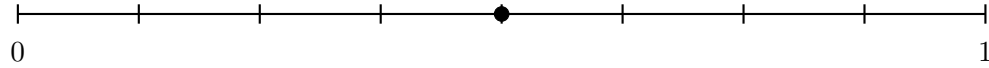
C. $\frac{1}{4}$

B. $\frac{1}{2}$

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



- 6) A number line from 0 to 1 is divided into 8 equal parts. How many parts from 0 to $\frac{4}{8}$?



- A. 2 parts
- B. 3 parts
- C. 4 parts
- D. 5 parts
- 7) A bag of flour has a mass of 2000 grams. A block of butter has a mass of 250 grams. How many more grams does the flour weigh than the butter?
- A. 250 grams
- B. 1750 grams
- C. 2000 grams
- D. 2250 grams
- 8) Which multiplication fact helps you solve $32 \div 8$?
- A. $4 \times 8 = 32$
- B. $5 \times 8 = 40$
- C. $8 \times 8 = 64$
- D. $3 \times 8 = 24$
- 9) A bar graph shows books. Maya's bar is 7 units (scale: 2 books per unit). Leo's bar is 5 units (scale: 2 books per unit). How many fewer books does Leo have than Maya?



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10) Which fraction is equivalent to $\frac{1}{3}$?

A. $\frac{1}{6}$

B. $\frac{2}{6}$

C. $\frac{3}{6}$

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

11) Ben bought 3 packs of erasers. Each pack has 8 erasers. How many erasers did Ben buy?

A. $8 \times 3 = 24$

B. $3 + 8 = 11$

C. $3 \times 3 = 9$

D. $8 + 8 = 16$

12) Which strategy would be MOST efficient for computing $405 - 189$?

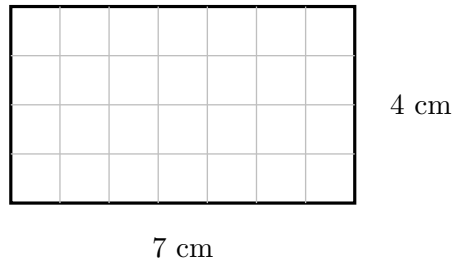
 A. Use the standard algorithm with regrouping across a zero B. Decompose both numbers by place value and subtract each part C. Count up from 189 to 405 on a number line D. Round both numbers and subtract the rounded amounts

13) Which time is closest to 2 : 45 PM?

 A. 2 : 30 PM B. 3 : 15 PM C. 3 : 30 PM D. 2 : 45 PM

14) Ben ate $\frac{1}{4}$ of a sandwich. Mia ate $\frac{1}{2}$ of a sandwich of the same size. Who ate more?

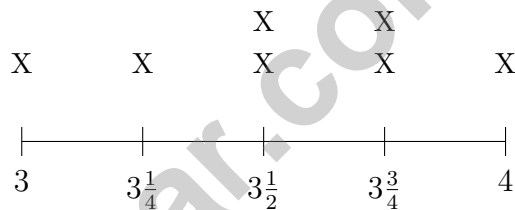
 A. Ben ($4 > 2$, so fourths are more) B. Mia C. They ate the same amount D. Cannot tell without knowing the sandwich size



1)

Count the grid squares to find the area.

- A. 11 sq cm C. 28 sq cm
 B. 22 sq cm D. 35 sq cm

2) A line plot shows window heights in feet: $3, 3\frac{1}{4}, 3\frac{1}{2}, 3\frac{3}{4}, 4$.How many windows are shorter than $3\frac{3}{4}$ feet?

- A. 3 C. 5
 B. 4 D. 6

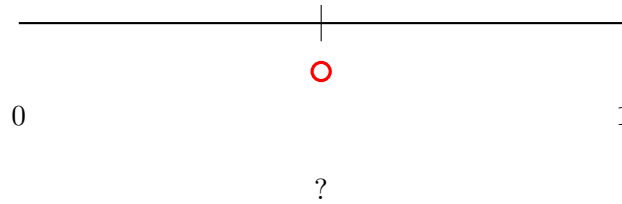
3) Which shows the distributive property for $4 \times (6 + 1)$?

- A. $(4 \times 6) + (4 \times 1) = 24 + 4 = 28$ C. $(4 + 6) \times (4 + 1) = 10 \times 5 = 50$
 B. $4 \times 7 = 28$ D. $(4 + 6) + (4 + 1) = 14$



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- 4) Identify the fraction at the marked point on this number line from 0 to 1 divided into 2 equal parts.



- A. $\frac{1}{2}$ C. $\frac{1}{4}$
 B. $\frac{1}{3}$ D. $\frac{2}{3}$
- 5) Why do 9×2 and 2×9 have the same product?
- A. They use different numbers C. They both equal 18
 B. Multiplication always works this way D. The commutative property lets us switch the order of factors
- 6) How many halves make one whole?

- 7) What is $54 \div 6$?
- A. 8 C. 10
 B. 11 D. 9



1) Ben tiles a square using unit squares. He puts 5 tiles in each row and 5 tiles in each column. How many tiles does he use?

A. 10

B. 25

C. 15

D. 50

2) Sam has 6 boxes of crayons. Each box has 10 crayons. How many crayons does Sam have in total?

3) Two different rectangles both have areas of 16 square units. Which pair of dimensions is NOT possible?

A. 4×4

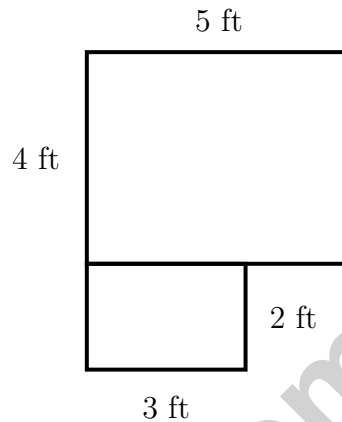
B. 2×8

C. 3×5

D. 1×16



- 4) An L-shaped patio is shown with dashed lines dividing it into two rectangles. The first rectangle is 5 ft by 4 ft. The second is 3 ft by 2 ft. What is the total area of the patio?



- A. 26 sq ft C. 14 sq ft
 B. 20 sq ft D. 40 sq ft
- 5) Look at odd numbers: 13, 15, 17, 19, 21, ...
What is the next odd number?
- A. 22 C. 24
 B. 25 D. 23
- 6) Which shows a correct tiling for $8 \times (3 + 4)$?
- A. Two rectangles: one 8×3 and one 8×4 C. One rectangle 8×7
 B. Two rectangles: one 3×4 and one 8×4 D. Two rectangles: one 8×8 and one 8×4
 E. Two rectangles: one 3×4 and one 8×8



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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 D is correct.** **(3.MD.D.8)** Area = width \times height = $9 \times 7 = 63$ square inches.
- 2) **The correct answer is 36 square units.** **(3.MD.C.5)** Count the square units by rows: $6 \times 6 = 36$ square units.
- 3) **Choice C is correct.** **(3.NBT.A.3)** Multiply $7 \times 6 = 42$, then add one zero: $7 \times 60 = 420$.
- 4) **Choice A is correct.** **(3.MD.C.7)** Both smaller rectangles need the same 6-unit side. Then the other sides, 4 and 3, join to make the full rectangle.
- 5) **Choice A is correct.** **(3.NF.A.1)** Three equal parts means each is $\frac{1}{3}$.
- 6) **Choice C is correct.** **(3.NF.A.2)** From 0 to $\frac{4}{8}$ is a count of 4 equal units.
- 7) **Choice B is correct.** **(3.MD.A.2)** Subtract: $2000 - 250 = 1750$ g.
- 8) **Choice A is correct.** **(3.OA.B.6)** Division is an unknown-factor problem. $32 \div 8 = \square$ is the same as finding $\square \times 8 = 32$, which gives $\square = 4$. Distractors B, C, D are off-by-one or incorrect products.
- 9) **The correct answer is 4 books.** **(3.MD.B.3)** Maya: $7 \times 2 = 14$. Leo: $5 \times 2 = 10$. Fewer: $14 - 10 = 4$.
- 10) **Choice B is correct.** **(3.NF.A.3)** Multiply numerator and denominator by 2: $\frac{1 \times 2}{3 \times 2} = \frac{2}{6}$.
- 11) **Choice A is correct.** **(3.OA.A.1)** Three packs with eight erasers each is 3 groups of 8, which equals $3 \times 8 = 24$ or $8 \times 3 = 24$. Option B is the addition misconception. Option C uses only one factor. Option D is incomplete (only two groups).
- 12) **Choice A is correct.** **(3.NBT.A.2)** For $405 - 189$, the standard algorithm with regrouping (forming 3 hundreds 9 tens from 4 hundreds 0 tens) is most direct. Count-up (C) requires many jumps; estimation (D) loses precision; place-value (B) requires tracking three separate subtractions. The algorithm minimizes errors for this problem.
- 13) **Choice D is correct.** **(3.MD.A.1)** 2 : 45 PM is exactly the time shown, so it is the closest match.
- 14) **Choice B is correct.** **(3.NF.A.3)** Same numerator (1), different denominators: halves are bigger pieces than fourths. So $\frac{1}{2} > \frac{1}{4}$. Mia ate more because she had one piece of a larger size.
- 15) **Choices B and E are correct.** **(3.OA.B.5)** This problem shows the associative property. When you group factors differently, like $(4 \times 6) \times 2$ or $4 \times (6 \times 2)$, you still get the same product. Option B states the name correctly, and E restates what associative means. A is commutative (switching order), C is distributive (breaking apart a sum), and D relates to multiplying by 1.
- 16) **Choice D is correct.** **(3.OA.A.4)** Divide: $32 \div 4 = 8$ columns. Check: $4 \times 8 = 32$.
- 17) **Choice B is correct.** **(3.MD.B.4)** At most $2\frac{1}{2}$ includes weights of 2, $2\frac{1}{4}$, and $2\frac{1}{2}$ ounces. The plot has $1 + 3 + 0 = 4$ X's at those values.
- 18) **Choice A is correct.** **(3.OA.D.9)** Row A shows 3, 6, 9, 12, which are multiples of 3. Row B shows multiples of 5.
- 19) **Choice B is correct.** **(3.NF.A.2)** $\frac{2}{4} = \frac{1}{2}$. Both strips show one-half colored.
- 20) **Choice D is correct.** **(3.OA.A.3)** Divide: $20 \div 4 = 5$ packs.
- 21) **Choice A is correct.** **(3.NBT.A.1)** The tens digit is 4. Since $4 < 5$, round down: 945 rounds to 900.
- 22) **Choice D is correct.** **(3.G.A.1)** Both squares and rectangles have 4 right angles (90 degrees). A square also has all equal sides, but a rectangle does not require this.
- 23) **Choice D is correct.** **(3.OA.A.2)** $18 \div 6 = 3$. The total crayons are divided equally among the friends.
- 24) **Choice D is correct.** **(3.MD.C.5)** A 5 by 5 square has $5 \times 5 = 25$ unit squares.
- 25) **Choice C is correct.** **(3.OA.D.8)** Step 1: Total shells: $5 \times 8 = 40$ shells. Step 2: Subtract given away: $40 - 12 = 28$ shells kept.
- 26) **Choice C is correct.** **(3.MD.C.6)** A unit square with side 1 m has area $1 \text{ m} \times 1 \text{ m} = 1 \text{ m}^2 = 1$ square meter.
- 27) **The correct answer is 8 equal parts.** **(3.G.A.2)** Eighths mean there are 8 equal parts.
- 28) **Choice A is correct.** **(3.MD.C.5)** Part A: $8 \times 4 = 32$ sq units. Part B: $6 \times 2 = 12$ sq units. Total: $32 + 12 = 44$ sq units.
- 29) **Choice C is correct.** **(3.MD.C.6)** $3 \times 4 = 12$ unit squares.
- 30) **Choice B is correct.** **(3.G.A.2)** 10 halves \div 2 halves per whole = $10 \div 2 = 5$ wholes.



Hi, Math Builder!

◇ Through 7 practice tests, you built your math house brick by brick. The walls are strong. The roof is on. You are ready for anything test day brings. ◇

★ **Builders know:** good plans make strong houses. You learned to plan, then build. That helps with any problem. ★

Builder's Tools

- **Foundation:** ROCK SOLID. Math facts are in place.
- **Frame:** STRONG. You can break problems into parts.
- **Walls:** TIDY. Your work is neat and clear.
- **Roof:** DONE. You always answer the question.

Builder tip: on test day, build each answer like a tiny house. Read first. Plan next. Do the math. Then check!

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

Jay Daie

Your Math Builder

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PRACTICE TODAY. MASTER TOMORROW.

This book is designed to help **Grade 3** students strengthen their math skills through focused practice and real progress.

- ✓ 7 full-length practice tests
- ✓ Aligned to Grade 3 standards
- ✓ Build confidence and achieve success
- ✓ Review, answer keys, and explanations



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Questions



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Question
Types



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