

6

Massachusetts

MCAS

GRADE 3

MATH

PRACTICE TESTS

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



6 Full-Length
Practice Tests



Detailed Answer Keys
and Explanations



Master Skills.
Boost Scores.
Succeed!

6 Massachusetts MCAS Grade 3 Math Practice Tests

Standards-Aligned Review with Mixed Practice and Answer Key



Six complete 30-question practice labs 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 Six Skill Labs

Six full tests, six focused resets, and a stronger Grade 3 problem solver



Notice the pattern. Choose a tool. Explain the answer.

To the Grade 3 Math Builder

This book gives you six practice labs for the Massachusetts MCAS. Each lab is a complete 30-question test, so students can practice accuracy, stamina, and clear mathematical thinking.

Massachusetts brings historic streets, coastal science, town greens, and busy trains. Strong math uses that same care: read the task, select a strategy, build the solution, and turn clues into a clear strategy.

Decode

Find the question, the units, and the useful numbers.

Design

Use an equation, array, number line, graph, or sketch.

Confirm

Make sure the answer matches the question.

Six-lab promise: I will work with patience, show useful thinking, and treat corrections as part of learning.

How to Use This Book

A six-lab routine for steady Grade 3 growth

Use one practice lab at a time. The goal is not only to finish more pages. The goal is to finish, review, repair, and bring a smarter habit to the next test. For Massachusetts students, each lab is a short route through historic streets, coastal science, town greens, and busy trains: steady, alert, and ready for the next clue.

1. **Warm up.** Skim the reference materials and remind yourself of common tools.
2. **Take one test.** Work steadily and mark problems that need a second look.
3. **Check answers.** Use the compact answer keys first.
4. **Read explanations.** Study missed items and any lucky guesses.
5. **Redo two problems.** Rewrite the work cleanly without peeking.
6. **Set the next lab goal.** Choose one skill or habit to improve.

Best review habit: A mistake is most useful when you can say why it happened and what you will do differently next time.



What Is Inside?

Six complete practice tests with review support

Part	What You Do	Why It Helps
Practice Tests 1–6	Solve six different 30-question tests.	Build stamina and see Grade 3 skills mixed together.
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.

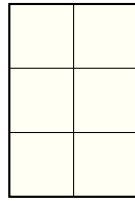
Each test has 26 multiple-choice questions, 1 select-all question, and 3 open-ended questions. This gives students practice with quick decisions, careful reading, and short written math answers for the Massachusetts MCAS path.



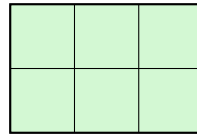
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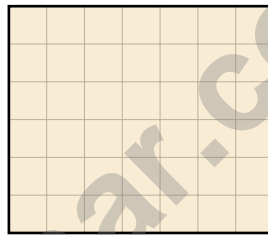
Z

1)

Shapes Y and Z are both made of unit squares. Which is true?

- A. Y has area 6, Z has area 6 C. Y has area 4, Z has area 8
 B. Y has area 5, Z has area 5 D. Y has area 2, Z has area 3

2) On a grid, a rectangle covers 6 rows and 7 columns of unit squares.



What is the area?

- A. 26 sq units C. 42 sq units
 B. 36 sq units D. 48 sq units

3) A number line from 0 to 1 is divided into 4 equal parts. What is the total distance from 0 to $\frac{4}{4}$?



- A. $\frac{1}{4}$ of the line C. $\frac{3}{4}$ of the line
 B. $\frac{2}{4}$ D. 1 whole



- 4) Which number sentence represents “How many groups of 3 are in 24?”
- A. $24 \div 3$ C. $3 + 24$
 B. $3 \div 24$ D. 3×24
- 5) Lily starts playing at 2 : 18 PM. She plays for 44 minutes. What time does Lily stop playing?
- A. 3 : 00 PM C. 3 : 12 PM
 B. 3 : 02 PM D. 2 : 58 PM
- 6) Lily wrote these four facts about the same numbers. Which one does NOT belong in the fact family?
- A. $36 \div 6 = 6$ C. $36 \div 9 = 4$
 B. $9 \times 4 = 36$ D. $4 \times 9 = 36$
- 7) A store sold 816 pencils. Round to the nearest 10 to estimate pencil sales.
- A. 810 C. 820
 B. 816 D. 900
- 8) Which fraction is equivalent to $\frac{3}{4}$?
- A. $\frac{3}{8}$ C. $\frac{6}{8}$
 B. $\frac{4}{8}$ D. $\frac{5}{8}$
- 9) Ava ate $\frac{10}{2}$ of a pizza. How many whole pizzas did she eat?
- A. 2 C. 5
 B. 10 D. 1



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- 10) $\begin{array}{cccc} \square & \square & \square & \square \\ \square & \square & \square & \square \\ \square & \square & \square & \square \end{array}$

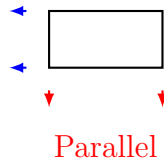
What repeated addition matches this array?

- A. $4 + 3 + 3 = 10$
 C. $3 + 4 = 7$
 B. $3 + 3 + 3 = 9$
 D. $4 + 4 + 4 = 12$
- 11) A square has a side length of 5 cm. What is the area of the square?
- A. 20 cm^2
 C. 30 cm^2
 B. 10 cm^2
 D. 25 cm^2
- 12) A rectangle is divided into 3 equal parts. Two parts are shaded. What fraction of the rectangle is NOT shaded?



- A. $\frac{1}{3}$
 C. $\frac{3}{3}$
 B. $\frac{2}{3}$
 D. $\frac{1}{2}$
- 13) A student is finding the area of an L-shaped figure. The figure is divided into two rectangles: top is 5 m by 2 m, bottom is 4 m by 3 m. Which steps are correct?
- A. Multiply: $5 \times 2 = 10 \text{ sq m}$ for the top rectangle.
 B. Multiply: $4 \times 3 = 12 \text{ sq m}$ for the bottom rectangle.
 C. Add the two areas: $10 + 12 = 22 \text{ sq m}$ for the total.
 D. Multiply all dimensions: $5 \times 2 \times 4 \times 3$ to get the total.
 E. The rectangles must be the same size or the method doesn't work.



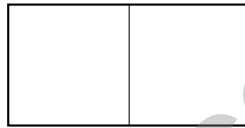


1)

Which statement about parallel sides is true?

- A. All triangles have parallel sides C. No quadrilaterals have parallel sides
 B. All rectangles have parallel sides D. Only circles have parallel sides

2) A shape is divided into equal parts so that each part is $\frac{1}{2}$ of the whole. How many equal parts is the shape divided into?



- A. 1 part C. 3 parts
 B. 2 parts D. 4 parts

3) An apple orchard has trees arranged in an array. There are 6 rows of trees with 9 trees in each row. How many trees are in the orchard?

- A. 15 C. 63
 B. 3 D. 54

4) There are 9 students with 4 crayons each. How many crayons total?



5) A bottle holds 2000 milliliters of juice. A glass holds about 250 milliliters. Which is the BEST estimate of how many glasses can be filled from the bottle?

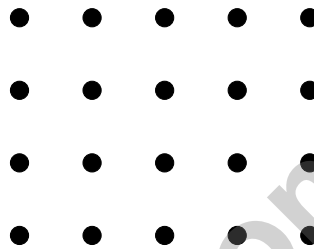
A. 2

C. 8

B. 4

D. 12

6) Look at the array diagram below showing groups of dots. Which division equation matches?



5 columns and 4 rows = 20 dots

A. $20 \div 5 = 4$

C. $20 \div 5 = 5$

B. $20 \div 4 = 4$

D. $20 - 5 = 15$

7) What is $80 \div 8$?

A. 8

C. 10

B. 9

D. 12

8) A rectangle has length 6 units and width 2 units. It has 6 rows with 2 unit squares in each row. Using repeated addition: $2 + 2 + 2 + 2 + 2 + 2 = ?$

A. 8 sq units

C. 10 sq units

B. 12 sq units

D. 14 sq units



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1) A train arrives at 2 : 18 PM. A bus arrives 22 minutes after the train. What time does the bus arrive?

A. 2 : 30 PM

C. 2 : 40 PM

B. 2 : 35 PM

D. 2 : 45 PM

2) Sam cuts a brownie into 2 equal pieces. What fraction is one piece?

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

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

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

D. $\frac{3}{2}$

3) If $\square \times 3 = 18$, what is $18 \div 3$?

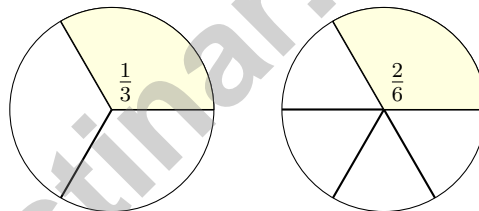
A. 3

C. 9

B. 18

D. 6

4) Which fraction is equivalent to $\frac{2}{6}$?



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

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

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

D. $\frac{2}{4}$

5) When you round 45 to the nearest 10, why does the ones digit matter more than the hundreds digit?

A. Because we are rounding to the nearest 10, not the nearest 100

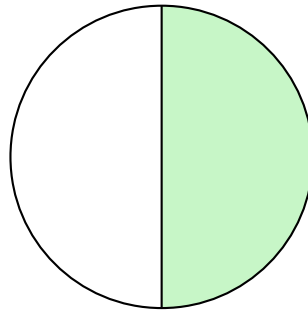
C. Because 45 is a large number

B. Because the ones digit is always bigger

D. Because 50 is better than 40



6) Here is a circle divided into 2 equal parts.



Each part of the circle is what fraction of the whole circle?

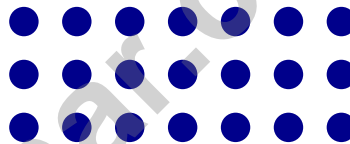
A. $\frac{1}{4}$

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

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

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

7) Look at this array. It has 3 rows and \square columns. There are 21 dots in total.



$$3 \times \square = 21$$

A. 9

B. 8

C. 6

D. 7

8) A rectangle has length 8 cm and width 5 cm. What is its perimeter?

A. 13 cm

B. 26 cm

C. 40 cm

D. 80 cm



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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 A is correct.** **(3.MD.C.6)** Y is $2 \times 3 = 6$ unit squares. Z is $3 \times 2 = 6$ unit squares. Both have the same area of 6 square units.
- 2) **Choice C is correct.** **(3.MD.C.6)** $7 \times 6 = 42$ unit squares.
- 3) **Choice D is correct.** **(3.NF.A.2)** $\frac{4}{4}$ means all 4 fourths. That is one whole, so the distance from 0 is 1.
- 4) **Choice A is correct.** **(3.OA.A.2)** Measurement division: Divide 24 by 3 to find how many groups of 3 fit in 24. The answer is 8 groups.
- 5) **Choice B is correct.** **(3.MD.A.1)** $2 : 18 + 44 \text{ min} = 2 : 18 + 42 \text{ min} + 2 \text{ min} = 3 : 00 + 2 \text{ min} = 3 : 02 \text{ PM}$.
- 6) **Choice A is correct.** **(3.OA.A.4)** The fact family for 4, 9, and 36 has equations like $4 \times 9 = 36$ and $36 \div 9 = 4$. The equation $36 \div 6 = 6$ uses 6, not 4 or 9.
- 7) **Choice C is correct.** **(3.NBT.A.1)** The ones digit is 6. Since $6 \geq 5$, round up: 816 rounds to 820.
- 8) **Choice C is correct.** **(3.NF.A.3)** $\frac{3}{4}$ and $\frac{6}{8}$ both equal three-fourths of a whole.
- 9) **Choice C is correct.** **(3.G.A.2)** $\frac{10}{2}$ means 10 halves. 2 halves make 1 whole, so $10 \div 2 = 5$ wholes.
- 10) **Choice D is correct.** **(3.OA.A.1)** The array shows 3 rows with 4 squares in each row. This equals $4 + 4 + 4 = 12$ or $3 \times 4 = 12$.
- 11) **Choice D is correct.** **(3.OA.A.3)** Area of a square = side \times side = $5 \times 5 = 25 \text{ cm}^2$.
- 12) **Choice A is correct.** **(3.G.A.2)** If 2 out of 3 parts are shaded, then 1 part is not shaded, which is $\frac{1}{3}$.
- 13) **Choices A and C are correct.** **(3.MD.C.5)** A is correct: multiply to find the first rectangle's area. C is correct: add the areas of all rectangles to get the total. B demonstrates the computation but C shows the critical additive step. D is wrong (do not multiply all dimensions together). E is wrong (rectangles can be any size as long as they don't overlap; the additive principle still holds).
- 14) **Choice C is correct.** **(3.NF.A.3)** Both bars show the same shaded length. When you split each half into 2 equal parts, 1 half becomes 2 fourths. So $\frac{1}{2} = \frac{2}{4}$.
- 15) **The correct answer is 3.** **(3.NF.A.2)** $\frac{3}{4}$ is the third tick from 0.
- 16) **Choice B is correct.** **(3.NF.A.1)** The denominator tells how many equal parts the whole is divided into. One-third ($\frac{1}{3}$) means 3 equal parts.
- 17) **Choice D is correct.** **(3.OA.C.7)** $40 \div 5 = 8$ because $8 \times 5 = 40$.
- 18) **Choice D is correct.** **(3.OA.B.6)** $63 \div 9 = \square$ means $\square \times 9 = 63$. Since $7 \times 9 = 63$, the answer is 7.
- 19) **Choice A is correct.** **(3.NF.A.1)** Two equal pieces means each is one half, written $\frac{1}{2}$. The denominator is the number of parts (2), and the numerator is 1 because we count one piece.
- 20) **Choice A is correct.** **(3.NF.A.3)** Ava colored one whole because $\frac{4}{4} = 1$. Noah colored less than one whole, so $\frac{4}{4} > \frac{4}{6}$.
- 21) **Choice B is correct.** **(3.MD.B.3)** Kat's bar is 4 units, which is tallest. $4 \times 5 = 20$ books, the most.
- 22) **Choice D is correct.** **(3.NBT.A.2)** Add: $127 + 234 = 361$. Ones: $7 + 4 = 11$ (write 1, carry 1). Tens: $2 + 3 + 1 = 6$. Hundreds: $1 + 2 = 3$.
- 23) **Choice B is correct.** **(3.NBT.A.3)** The pattern shows: when you multiply any number by 10, you write the number and add a zero. So $8 \times 10 = 80$.
- 24) **The correct answer is 9 pencils.** **(3.MD.B.4)** Add all X's: $2 + 1 + 3 + 2 + 1 = 9$ pencils total.
- 25) **Choice D is correct.** **(3.NF.A.2)** $\frac{3}{6} = \frac{1}{2}$. Both mark the halfway point on a number line.
- 26) **Choice B is correct.** **(3.MD.A.2)** $1 \text{ kg} = 1000 \text{ g}$.
- 27) **Choice B is correct.** **(3.MD.D.8)** Area = length \times width = $5 \times 3 = 15$ square inches. Choice A (8) is the sum; C (10) is 5×2 ; D (12) is 4×3 .
- 28) **Choice A is correct.** **(3.OA.D.9)** $8 \rightarrow 16$ is $+8$; $16 \rightarrow 24$ is $+8$; $24 \rightarrow 32$ is $+8$. The row for 8 shows multiples of 8: $8 \times 1 = 8$, $8 \times 2 = 16$, $8 \times 3 = 24$, etc.
- 29) **Choice A is correct.** **(3.OA.D.8)** Step 1: Find total pencils: $5 \times 6 = 30$. Step 2: Subtract: $30 - 10 = 20$ pencils. (Choice C is the answer to step 1 only—students must complete both steps.)



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Trail Guide's Final Note

Hi, Brave Trail-Walker!

◇ You walked all 6 miles of the practice trail. Smooth paths, steep climbs, narrow passes. Every step taught you something. ◇

★ **Trail guides know:** the most important thing is to keep moving. Slow steps still get you there. You have a steady stride now. ★

Trail Survey

- **Route Knowledge:** You know lots of problem types.
- **Steady Pace:** You don't rush. You don't stop.
- **Pack Loaded:** You have all the math tools you need.
- **Confidence:** You trust your training.

Guide's tip: on test day, stay on the trail you've walked before. Use the strategies you've practiced. Trust the route. The summit is one steady walk away!

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

Jay Daie

Your Math Trail Guide

BUILD CONFIDENCE. MASTER MATH. ACHIEVE SUCCESS!



This **Grade 3 Math Practice Tests** book is the perfect companion for students who want to strengthen their math skills and excel in school. With **6** full-length practice tests designed to reflect real test formats, students get the practice they need to understand key concepts, build problem-solving skills, and tackle any challenge with confidence.

PERFECT FOR:

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- ✓ Homework & Review
- ✓ Test Preparation

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SUCCEED TOMORROW!**

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Reinforce key Grade 3 math skills and build a solid foundation.



Better Problem Solving

Develop critical thinking and solve problems with ease.



Test Confidence

Get familiar with test formats and reduce exam stress.



Track Progress

Measure improvement and focus on areas that matter.



Achieve Success

Build the skills and confidence to reach higher goals.

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- ✓ Algebraic Thinking
- ✓ Geometry
- ✓ Measurement & Data
- ✓ Graphing & Data Analysis
- ✓ Number Patterns
- ✓ Word Problems
- ✓ Ratio & Proportion
- ✓ Perimeter, Area & Volume
- ✓ And More!



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Aligns with Grade 3 Learning Standards



Builds Critical Thinking & Problem-Solving