

5 FULL-LENGTH Massachusetts MCAS

GRADE 5 MATH

★ PRACTICE TESTS ★



5 FULL-LENGTH
PRACTICE TESTS



COMPLETE
STANDARDS
REVIEW



SKILL PRACTICE,
WORD PROBLEMS,
AND MORE!

$$\frac{3}{4} + \frac{2}{4} = \frac{5}{4}$$



$$12 \times 3 = 36$$



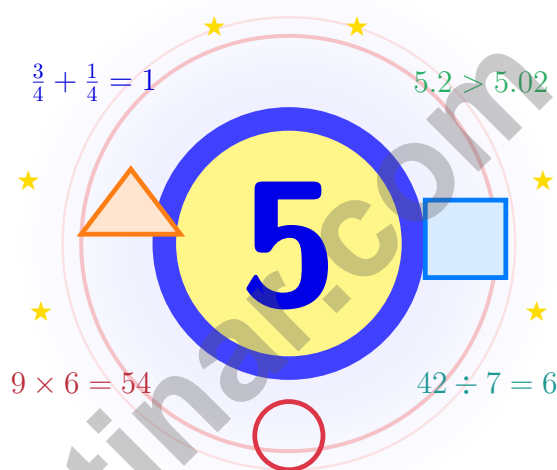
$$\frac{7}{10} = 0.7$$



BUILT FOR SUCCESS. DESIGNED TO HELP EVERY STUDENT.

5 Massachusetts MCAS Grade 5 Math Practice Tests

A five-checkpoint adventure for Massachusetts Grade 5 thinkers



Five full tests, a friendly quick review, smart strategy pages, and student-tested support that turn Grade 5 practice in The Bay State into a steady quest of real growth.

Jay Daie and Reza Nazari



Copyright ©

Testinar Inc



Published by Testinar Inc

Testinar.com

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the author, except in the case of brief quotations embodied in critical reviews and certain other noncommercial uses permitted by copyright law, including Section 107 or 108 of the 1976 United States Copyright Act.

This publication is independently produced and has no official connection to any state, district, or national testing program.

Test names and organizational names used herein are the property of their respective trademark holders.



Copyright ©

Massachusetts Grade 5: Quest Briefing

A five-checkpoint adventure for Massachusetts Grade 5 thinkers

Just for Massachusetts Grade 5 Quest Specialists

This book is your practice zone, not a place to be perfect. Each of the five tests gives you a chance to notice clues, choose a strategy, check your thinking, and come back stronger for the next round. Math is a lot like the Freedom Trail – one careful step leads to the next, and every stop adds something to the story.

Some questions will feel easy right away. Some will make you slow down, draw, estimate, or retry. That is excellent news. It means your math brain is doing real work.

Read Slow

Read every word, twice
when needed.

Choose Smart

Pick the operation,
sketch, or table that fits.

Grow

Lock the lesson in by
reflecting after each
problem.

A strong quest habit for Massachusetts: slow down, write neatly, estimate before you solve, and keep going even when a problem looks tricky at first. That is exactly how confident math students are built.

Testinar.com



Scan me



Your Step-by-Step Plan

A simple routine that turns five tests into real growth

Step 1: Set Up

Pencil ready, distractions gone.
Wake up important ideas before you begin so your brain is ready to use them.

Step 2: Work the Test

Take a full test like the real day.
Find a quiet space, work carefully, and let accuracy matter more than speed.

Step 3: Look Back

Walk through your answers without rushing.
Circle missed questions and look for patterns. Which skill or habit needs another try?

Step 4: Climb Higher

Pick one or two skills to sharpen next.
Read the explanation, repair the work, and carry that lesson into the next test.

A Five-Week Massachusetts Quest Map

Week	Mission Focus
Week 1	Take Test 1 like the first stop on a long trail.
Week 2	Take Test 2 and notice one habit that grew steadier.
Week 3	Take Test 3 and lift fractions, decimals, and conversions.
Week 4	Take Test 4 and slow down on multi-step problems.
Week 5	Take Test 5 with calm, careful, confident work.



Table of Contents

★ Practice Test 1	_____	20
★ Practice Test 2	_____	34
★ Practice Test 3	_____	49
★ Practice Test 4	_____	63
★ Practice Test 5	_____	76
Practice Test Answer Keys	_____	92
Practice Test Answers and Explanations	_____	96

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

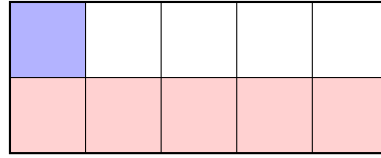
1 day = 24 hours (hr) 1 year = 52 weeks



- 1) A composite stage platform is made from two non-overlapping rectangular prisms. Prism A is 6 centimeters long, 2 centimeters wide, and 2 centimeters tall. Prism B is 3 centimeters long, 3 centimeters wide, and 1 centimeter tall. What is the total volume?
- A. 33 cubic centimeters C. 9 cubic centimeters
 B. 24 cubic centimeters D. 45 cubic centimeters
- 2) Pattern: 4, 12, 36, 108, ... Identify the rule and find the 6th term.
- A. Multiply by 3; 972 C. Add 8; 148
 B. Multiply by 4; 1,296 D. Add 24; 168
- 3) A rectangular prism has a volume of 120 cm^3 , length 10 cm, and width 3 cm. What is its height?
- A. 5 cm C. 6 cm
 B. 4 cm D. 3 cm
- 4) A painter mixed $9\frac{1}{3}$ gallons of blue paint and $4\frac{2}{3}$ gallons of red paint. How much more blue paint is there than red paint?
- A. $4\frac{2}{3}$ gal C. $5\frac{1}{3}$ gal
 B. 5 gal D. $5\frac{2}{3}$ gal
- 5) A student claims $25 \times 100 = 2500$. Is the product correct?
- A. Yes; the product is correct for this whole-number problem C. No; zeros go on the left, not the right
 B. No; the product should be 250 D. No; the product should be 25,000



- 6) An artist uses $\frac{1}{5}$ of a roll of canvas. Then she uses $\frac{1}{2}$ of what she already used for a second project. What fraction of the original roll is used in the second project?



- A. $\frac{1}{3}$
 C. $\frac{2}{5}$
 B. $\frac{1}{5}$
 D. $\frac{1}{10}$

7)

30×20	8×20	38×24
30×4	8×4	

Use the area model to find 38×24 .

- A. 900
 C. 912
 B. 910
 D. 920
- 8) Which statement about a rectangle must be true?
- A. It has exactly one pair of equal sides.
 C. It has four sides that are all the same length.
 B. It has four right angles.
 D. It has no parallel sides.
- 9) Find: $6 \div \frac{1}{3}$.

Record your answer in the space provided.



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	Metric
1 foot (ft) = 12 inches (in.)	1 meter (m) = 100 centimeters (cm)
1 yard (yd) = 3 feet (ft)	1 centimeter (cm) = 10 millimeters (mm)
1 yard (yd) = 36 inches (in.)	1 kilometer (km) = 1,000 meters (m)

CAPACITY

Customary	Metric
1 cup (c) = 8 fluid ounces (fl oz)	1 liter (L) = 1,000 milliliters (mL)
1 pint (pt) = 2 cups (c)	
1 quart (qt) = 2 pints (pt)	
1 gallon (gal) = 4 quarts (qt)	

WEIGHT AND MASS

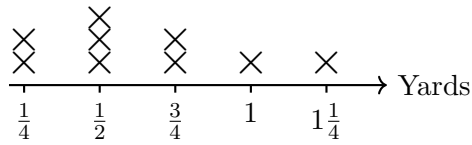
Customary	Metric
1 pound (lb) = 16 ounces (oz)	1 kilogram (kg) = 1,000 grams (g)
	1 gram (g) = 1,000 milligrams (mg)

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

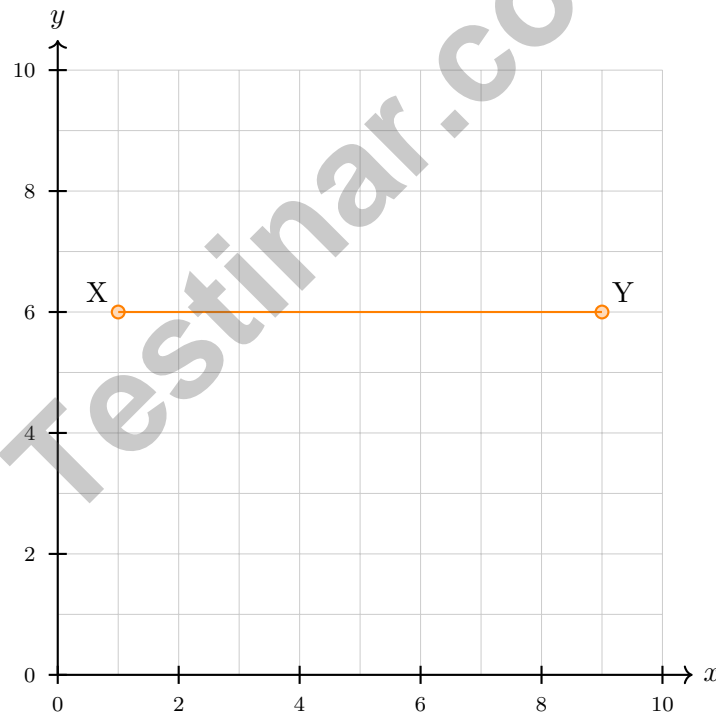


1) The line plot shows lengths of ribbon pieces, in yards:



What is the total length of all the ribbon pieces?

- A. $5\frac{1}{4}$ yards C. $6\frac{1}{4}$ yards
 B. $5\frac{3}{4}$ yards D. $6\frac{3}{4}$ yards
- 2) Two points form a line segment. Point X is at (1, 6) and Point Y is at (9, 6). What is the length of segment XY?



- A. 6 units C. 9 units
 B. 8 units D. 10 units



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



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



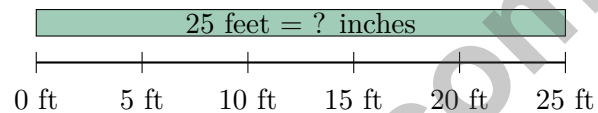
1) A grocery store receives a shipment of 2,160 apples. The apples are packed in boxes of 24. How many boxes are in the shipment?

- A. 85 boxes C. 90 boxes
 B. 95 boxes D. 100 boxes

2) A growing tile pattern: 4, 7, 10, 13 tiles. How many in the 12th figure?

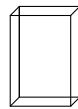
- A. 35 C. 37
 B. 36 D. 40

3) How many inches are in 25 feet?



- A. 240 inches C. 360 inches
 B. 300 inches D. 420 inches

4) Which of the following is the best metric unit for measuring the volume of a small juice box?



juice box

- A. Cubic meters C. Cubic centimeters
 B. Cubic feet D. Cubic inches



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.

Testinar.com



Scan me

Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice A is correct.** **(5.MD.C.3)** Find each part first: Prism A is $6 \times 2 \times 2 = 24$ cubic centimeters, and Prism B is $3 \times 3 \times 1 = 9$ cubic centimeters. Because the parts do not overlap, add them: $24 + 9 = 33$ cubic centimeters.
- 2) **Choice A is correct.** **(5.OA.B.3)** Rule: multiply by 3. Terms: 4, 12, 36, 108, 324, 972.
- 3) **Choice B is correct.** **(5.MD.C.5)** The base area is $10 \times 3 = 30$ square centimeters. Since $120 \div 30 = 4$, the height is 4 cm.
- 4) **Choice A is correct.** **(5.NF.A.1)** Borrow 1: $9\frac{1}{3} = 8\frac{4}{3}$. Then $8\frac{4}{3} - 4\frac{2}{3} = 4\frac{2}{3}$ gallons.
- 5) **Choice A is correct.** **(5.NBT.A.2)** The product is correct: $25 \times 100 = 2500$. A more precise way to say the rule is that multiplying by 100 shifts the digits two places left in the place-value chart.
- 6) **Choice D is correct.** **(5.MD.C.5)** Second project uses $\frac{1}{2} \times \frac{1}{5} = \frac{1}{10}$ of the original roll.
- 7) **Choice C is correct.** **(5.NBT.B.5)** Calculate each partial product: $(30 \times 20) + (8 \times 20) + (30 \times 4) + (8 \times 4) = 600 + 160 + 120 + 32 = 912$.
- 8) **Choice B is correct.** **(5.G.B.3)** A rectangle is a quadrilateral with four right angles. It also has two pairs of parallel sides, so choices A and D are not true.
- 9) **The correct answer is 18.** **(5.NF.B.7)** Each whole has 3 one-third pieces. Six wholes have $6 \times 3 = 18$ one-third pieces, so the quotient is 18.
- 10) **Choice B is correct.** **(5.NF.B.5)** $36 \times \frac{2}{9} = \frac{72}{9} = 8$ crayons. The fraction is less than 1, so the product is smaller than the original amount.
- 11) **Choice A is correct.** **(5.NBT.B.7)** In the tenths place: 4 tenths $<$ 5 tenths, so $0.45 < 0.54$.
- 12) **Choice A is correct.** **(5.NF.B.6)** Use $\frac{3}{4}$ of the full-trip amount: $\frac{3}{4} \times \frac{1}{2} = \frac{3}{8}$ tank.
- 13) **Choice D is correct.** **(5.NBT.B.7)** Add: $\$12.34 + \$15.67 = \$28.01$; then $\$28.01 + \$18.92 = \$46.93$.
- 14) **Choice A is correct.** **(5.G.A.2)** The ordered pair should show the input and the output. Dividing 12 by 3 gives 4, so the pair is (12, 4).
- 15) **Choice D is correct.** **(5.G.B.4)** Rectangles include the rectangle-only region and the intersection: $6 + 3 = 9$.
- 16) **Choice A is correct.** **(5.MD.C.5)** Use the rectangular-prism volume formula: $8 \times 5 \times 7 = 280$. So the volume is 280 cubic centimeters.
- 17) **The correct answer is 48.** **(5.MD.A.1)** $4 \times 12 = 48$ inches. Each foot has 12 inches, so 4 feet has four groups of 12.
- 18) **Choice D is correct.** **(5.NF.B.6)** Use total amount divided by the size of one piece. The equation is $8 \div \frac{1}{3} = n$.
- 19) **Choice B is correct.** **(5.OA.A.2)** Each box starts with 24 pencils, so 6 boxes have 6×24 pencils. Since 4 pencils in each box are broken, subtract 6×4 broken pencils.
- 20) **The correct answer is 18.** **(5.NF.A.2)** Multiples of 6: 6, 12, 18, ... Multiples of 9: 9, 18, ... LCD is 18.
- 21) **Choices A, B are correct.** **(5.NBT.B.7)** Dividing 10 by a value less than 1 gives a quotient greater than 10, so A and B work. C and D have divisors greater than 1, so those quotients are less than 10.
- 22) **Choice B is correct.** **(5.NF.A.2)** Common denominator is 35: $\frac{3}{7} = \frac{15}{35}$ and $\frac{1}{5} = \frac{7}{35}$. So $\frac{15}{35} - \frac{7}{35} = \frac{8}{35}$ gallon.
- 23) **Choice D is correct.** **(5.G.B.4)** A square has two pairs of opposite sides that are parallel and equal, which makes it a parallelogram. In fact, a square is a special type of parallelogram.
- 24) **Choice C is correct.** **(5.NBT.A.2)** $12.5 \div 100 = 0.125$ and $125 \div 1000 = 0.125$. Both quotients are equal.
- 25) **Choice A is correct.** **(5.MD.A.1)** Total needed: 5 feet 6 inches = 66 inches. Already bought: 2 feet 10 inches = 34 inches. Remaining: $66 - 34 = 32$ inches = 2 feet 8 inches.
- 26) **Choice D is correct.** **(5.NF.B.4)** $4\frac{1}{2} = \frac{9}{2}$ and $2\frac{1}{3} = \frac{7}{3}$. Multiply: $\frac{9}{2} \times \frac{7}{3} = \frac{63}{6} = 10\frac{1}{2}$ square meters.
- 27) **Choice D is correct.** **(5.G.B.4)** Two sides have the same marking (1 tick mark each), so two sides are equal, making it isosceles.
- 28) **The correct answer is 6000.** **(5.NBT.A.2)** Multiplying by 10,000 moves the decimal point four places right: $0.6 \rightarrow 6,000$.
- 29) **Choice C is correct.** **(5.OA.A.1)** Simplify both parentheses first: $8 + 2 = 10$ and $5 - 1 = 4$. Then go left to right: $10 \times 4 = 40$, and $40 \div 5 = 8$.



Hey there, Mathematical Inventor!

★ Brilliant innovation session! You've engineered solutions to five complete practice tests, designing creative approaches and building mathematical machines in your mind like a master inventor! Every problem you solved required you to design a solution strategy, test different approaches, and refine your methods. That's exactly what inventors do and you've become exceptionally skilled at it! ★

◇ **Here's what successful inventors understand:** the first prototype rarely works perfectly. Great inventors test, adjust, redesign, and improve until they create something remarkable. You've practiced that exact process through these five tests! Each mistake taught you to refine your approach, and now you have a toolbox full of reliable mathematical inventions ready to use! ◇

Inventor's Workshop: Your Creations

- **Problem-Solving Blueprints:** You've designed reliable methods for every problem type!
- **Strategic Prototypes:** You test multiple approaches to find the most efficient solution!
- **Quality Testing:** You verify your answers to ensure accuracy before submitting!
- **Continuous Improvement:** You learn from feedback and consistently enhance your skills!

Remember this inventor's principle: preparation is the foundation of innovation! Five complete practice tests represent substantial preparation. You've tested your mathematical machines repeatedly, and they work beautifully. Test day is your opportunity to demonstrate your inventions to the world. Trust your engineering!

Want to patent a particularly clever solution method? Share your mathematical inventions at reza@testinar.com. I celebrate innovative thinking!

Reza Nazari & Jay Daie

Your Supportive Math Coaches

5 FULL-LENGTH TESTS. STRONG SKILLS. BRIGHTER RESULTS.



Build confidence and master math with **5 full-length** practice tests designed to reflect the real test experience. This book provides the practice, review, and support students need to succeed in Grade 5 and beyond!

WHAT'S INSIDE:



5 FULL-LENGTH PRACTICE TESTS

Realistic tests that build familiarity, boost focus, and improve test readiness.



COMPLETE STANDARDS REVIEW

Covers all essential Grade 5 math topics with clear explanations and examples.



SKILL PRACTICE

Strengthen key math skills through a wide variety of practice questions.



WORD PROBLEMS

Build critical thinking and problem-solving skills with real-world questions.



FULL ANSWER KEY

Step-by-step explanations for every question to help students learn and improve.



PRACTICE MORE. LEARN BETTER. SUCCEED ANYWHERE.



Build Confidence
with consistent
practice



Improve Accuracy
and problem-
solving skills



Time Management
strategies for
test success



**Achieve Your
Best Score!**



Visit testinar.com/math5
for more Grade 5 math resources
and practice materials!



Testinar
Smart Practice. Stronger Results.