

GEORGIA

Milestones

GRADE 8 MATH

PRACTICE TESTS

5

PRINTED
TESTS



2

 ONLINE
TESTS

**Standards Aligned
Problem Solving For
Comprehensive Assessment Programs**



Use these two additional online practice tests for **extra review** after the printed tests in this book.



$$a^2 + b^2 = c^2$$



$$y = mx + b$$

5 Georgia Milestones Grade 8 Math Practice Tests

Five Milestones Rounds for Standards-Based Grade 8 Practice



Five complete 40-question Grade 8 Milestones practice rounds with real numbers, exponents, scientific notation, equations, functions, transformations, geometry, data analysis, probability, answer keys, and clear explanations for every item.

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 ©

Welcome, Georgia Grade 8 Problem Solver!

Five focused rounds for sharper Milestones math thinking

This book gives you five full Grade 8 Milestones math practice tests. Each round is built to help you recognize structure, reason with real numbers and exponents, analyze linear relationships, connect equations with graphs, and explain your thinking with care.

Your Georgia Practice Promise

I will read every question carefully, choose a strategy that fits, write enough work to prove my answer, and use corrections as training for the next test.

Read

Model

Verify

How to Use This Book

A five-session plan for confident Grade 8 review

1. **Warm up with the review pages.** Notice the big ideas before starting the tests.
2. **Complete one test at a time.** Treat each 40-question round like a real practice session.
3. **Show your reasoning.** Jot an exponent rule, equation, graph, transformation, diagram, or quick estimate when it helps.
4. **Correct actively.** Rework missed items before reading the explanation.
5. **Choose the next target.** After each test, name one skill and one habit to improve.

Georgia review rhythm: Work a test, score it, study your misses, then come back ready for the next round with one clear goal.



What Is Inside?

Five Milestones tests, 200 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Real numbers, exponents, scientific notation, equations, and careful reading.
Tests 3–5	Functions, systems, transformations, geometry, data analysis, and multi-step problem solving.
Answer Pages	Compact keys and explanations that show why each answer works.

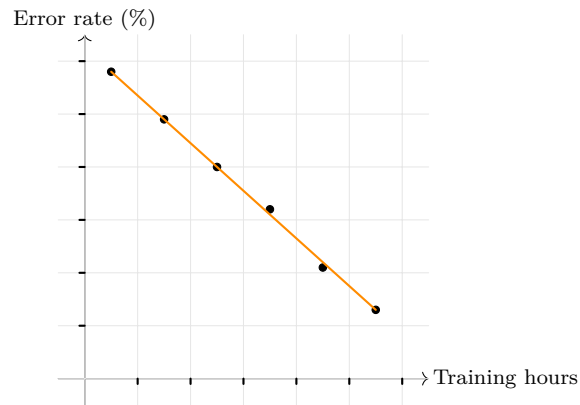
The tests are mixed on purpose. Grade 8 success means recognizing which idea is being tested even when the next question changes format.



Scan me!
For more practice
& answers

Table of Contents

★ Practice Test 1	_____	15
★ Practice Test 2	_____	32
★ Practice Test 3	_____	47
★ Practice Test 4	_____	63
★ Practice Test 5	_____	78
Practice Test Answer Keys	_____	96
Practice Test Answers and Explanations	_____	100



1)

A training program finds error rate follows $E = -0.9t + 6$, where E is error rate (

- | | |
|---|--|
| ☐ A. Error rate increases as training time increases | ☐ C. Error rate stays constant regardless of training |
| ☐ B. Error rate decreases as training time increases | ☐ D. Training has no effect on errors |

2) $\frac{7.5 \times 10^9}{2.5 \times 10^5} = ?$

- | | |
|--|--|
| ☐ A. 10×10^4 | ☐ C. 3×10^4 |
| ☐ B. 3.75×10^4 | ☐ D. 5×10^{14} |

3) A bike travels at 12 miles per hour. The equation is $d = 12t$, where d is distance in miles and t is time in hours. How far does the bike travel in 3.5 hours?

- | | |
|--------------------------------------|--------------------------------------|
| ☐ A. 30 miles | ☐ C. 42 miles |
| ☐ B. 36 miles | ☐ D. 48 miles |

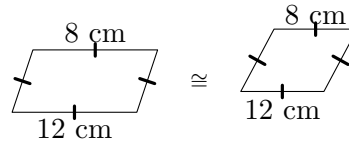


Scan me!
For more practice
& answers

- 4) A linear equation shows the relationship between time spent studying (x , hours) and test score (y , points): $y = 5x + 60$. What is the slope, and what does it represent?
- ☐ A. Slope is 5; for each additional hour of study, the test score increases by 5 points
- ☐ B. Slope is 60; the starting test score is 60 points
- ☐ C. Slope is $5x$; score changes with study time
- ☐ D. Slope is 60; for each additional hour, the score increases by 60 points
- 5) A store has two types of mangoes. Premium mangoes cost \$2 each, standard mangoes cost \$1 each. A customer buys 15 mangoes for \$20. Solving the system $p + s = 15$ and $2p + s = 20$ gives $p = 5, s = 10$. Is this solution valid in the real world?
- ☐ A. No, because only the first equation is satisfied.
- ☐ B. No, because p is not a whole number.
- ☐ C. Yes, because it represents a realistic purchase.
- ☐ D. No, because the total cost should be higher.
- 6) If $f(x) = x - 3$ and $f(x) = 5$, what is x ?
- ☐ A. 2
- ☐ B. 8
- ☐ C. 5
- ☐ D. 15
- 7) A student's test score shows: starts at 60, increases to 90 by question 5, then stays at 90 for questions 6-10, where 90 is the maximum possible score. Which is true?
- ☐ A. The student answered 30 consecutive questions correctly
- ☐ B. The rate of improvement was constant throughout
- ☐ C. The student's score increased from question 5 to 10
- ☐ D. The student improved in the first half but was already at the ceiling in the second half



- 8) Two congruent trapezoids are shown. One trapezoid has parallel sides of 8 cm and 12 cm. What are the parallel sides of the congruent trapezoid?



- ☐ A. 4 cm and 6 cm
- ☐ B. 8 cm and 12 cm
- ☐ C. 16 cm and 24 cm
- ☐ D. Cannot be determined
- 9) Which transformation rule represents a reflection across the y -axis?
- ☐ A. $(x, y) \rightarrow (x, -y)$
- ☐ B. $(x, y) \rightarrow (-x, y)$
- ☐ C. $(x, y) \rightarrow (y, x)$
- ☐ D. $(x, y) \rightarrow (-x, -y)$
- 10) A triangle has interior angles in the ratio 2 : 3 : 4. What is the measure of the smallest angle?
- ☐ A. 20°
- ☐ B. 30°
- ☐ C. 40°
- ☐ D. 50°
- 11) A right triangle has legs of 20 and 21. What is the hypotenuse?
- ☐ A. 29
- ☐ B. 41
- ☐ C. 400
- ☐ D. 1



Scan me!
For more practice
& answers

1) A figure in Quadrant I is reflected across the line $y = -x$. Which quadrant will the image be in?

☐ A. Quadrant I

☐ C. Quadrant IV

☐ B. Quadrant II

☐ D. Quadrant III

2) What is $(2.5 \times 10^4) + (3 \times 10^3)$ in scientific notation?

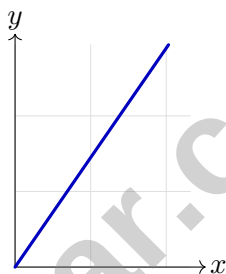
☐ A. 5.5×10^3

☐ C. 5.5×10^4

☐ B. 0.55×10^5

☐ D. 2.8×10^4

3) Which point must be on the graph of $y = 2x$?



☐ A. (1, 2)

☐ C. (2, 1)

☐ B. (1, 3)

☐ D. (0, 2)

4) A cube-shaped storage container has a volume of 512 cubic feet. What is the side length of the cube?



5) An electrician charges \$50 for a service call and \$35 per hour. A customer's bill comes to \$225. How many hours did the electrician work?

☐ A. 4 hours

☐ C. 6 hours

☐ B. 5 hours

☐ D. 7 hours

6) A student's test score improves by 3 points for every hour of study. What is the slope if hours are on the x -axis?

☐ A. $\frac{1}{3}$
☐ C. 6

☐ B. -3
☐ D. 3

7) A chemist mixes a 30% acid solution with an 80% acid solution to make 100 mL of a 50% solution. Let x = volume of 30% solution (mL). Which equation represents the acid content?

☐ A. $0.3x + 0.8(100 - x) = 0.5(100)$
☐ C. $30x + 80x = 50 \cdot 100$
☐ B. $0.3(100 - x) + 0.8x = 50$
☐ D. $0.3x + 0.8x = 50$

8) Solve the system $\begin{cases} x + y = 8 \\ x - y = 2 \end{cases}$ by elimination.

9) The table shows values of function p :

x	-2	0	2	4
$p(x)$	3	7	11	15

If the pattern continues, what is $p(6)$?

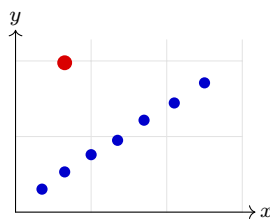
☐ A. 17

☐ C. 20

☐ B. 19

☐ D. 22


Scan me!
For more practice
& answers



1)

A scatter plot shows years of education versus annual income for 100 adults. Most points cluster in an upward trend, but three points are far below the trend line, representing people with high education but low income. These three points are:

- ☐ A. Errors that should be removed ☐ C. Examples of no correlation
☐ B. Part of the overall trend ☐ D. Outliers deserving investigation

2) A credit card offers 0% APR for 12 months on purchases, then 15% APR. If you buy \$800 during the promotional period and pay nothing, how much is owed after 12 months?

- ☐ A. \$1,400 ☐ C. \$1,200
☐ B. \$920 ☐ D. \$800

3) Simplify $\frac{12a^6b^{-2}}{3a^2b^3}$.

- ☐ A. $4a^8b$ ☐ C. $\frac{12a^8}{b^6}$
☐ B. $9a^4b^5$ ☐ D. $4a^4b^{-5}$ or $\frac{4a^4}{b^5}$

4) Express 356,000 in scientific notation.



5) Which of the following is a perfect square?

☐ A. 48

☐ C. 75

☐ B. 99

☐ D. 64

6) Convert $0.454545\ldots$ to a fraction in simplest form.

7) Which quotient is the largest?

☐ A. $\frac{8 \times 10^6}{4 \times 10^2}$

☐ C. $\frac{9 \times 10^4}{3 \times 10^{-2}}$

☐ B. $\frac{6 \times 10^5}{2 \times 10^1}$

☐ D. $\frac{4 \times 10^7}{2 \times 10^3}$



Scan me!
For more practice
& answers

+ -

.....

81

.....

× ÷

Testinar.com

Georgia Milestones Grade 8 Practice Test Answer Keys**How to use this section with a Grade 8 student:**

1. check the answer first and circle any item that needs another look
2. retry the problem with fresh work before reading the explanation
3. write one short lesson learned from each missed or guessed item

A strong review routine turns every correction into a sharper plan for the next Georgia Milestones practice test.

Testinar.com



Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice B is correct.** **(8.FGR.6.2)** Negative slope means as one variable increases, the other decreases. More training leads to fewer errors.
- 2) **Choice C is correct.** **(8.NR.2.4)** Divide coefficients: $7.5 \div 2.5 = 3$. Subtract exponents: $10^9 - 5 = 10^4$. Result: 3×10^4 .
- 3) **Choice C is correct.** **(8.PAR.4.1)** Substitute $t = 3.5$: $d = 12(3.5) = 42$ miles. The proportional relationship scales with time.
- 4) **Choice A is correct.** **(8.FGR.5.7)** In the form $y = mx + b$, the slope is $m = 5$. This means the rate of change is 5 points per hour. The constant term $+60$ is the y -intercept (starting score).
- 5) **Choice C is correct.** **(8.FGR.7.1)** The solution $p = 5, s = 10$ satisfies both equations: $5 + 10 = 15$ (true) and $2(5) + 10 = 20$ (true). Moreover, both p and s are non-negative integers, making it valid in a real-world context.
- 6) **Choice B is correct.** **(8.FGR.5.1)** Solve $x - 3 = 5$ for x : $x = 5 + 3 = 8$.
- 7) **Choice D is correct.** **(8.FGR.5.2)** The score improves (60 to 90) in the first 5 questions, then plateaus at 90 for the rest. This indicates hitting the maximum possible score. C is false (no increase after Q5), A is unclear/false, B is false (two different rates).
- 8) **Choice B is correct.** **(8.GSR.8)** Congruent figures have equal corresponding sides. The congruent trapezoid has the same parallel sides: 8 cm and 12 cm.
- 9) **Choice B is correct.** **(8.GSR.8)** Reflection across the y -axis negates the x -coordinate while keeping y the same: $(x, y) \rightarrow (-x, y)$.
- 10) **Choice C is correct.** **(8.GSR.8)** Let the angles be $2x, 3x$, and $4x$. Sum: $2x + 3x + 4x = 180$, so $9x = 180$ and $x = 20^\circ$. Smallest angle: $2x = 40^\circ$.
- 11) **Choice A is correct.** **(8.GSR.8.2)** Using $a^2 + b^2 = c^2$: $20^2 + 21^2 = 400 + 441 = 841$, so $c = 29$ (the 20-21-29 triple).
- 12) **Choice A is correct.** **(8.GSR.8.3)** The hypotenuse (15) is the longest side. The correct equation is $c^2 = a^2 + b^2$, which gives $15^2 = 9^2 + b^2$.
- 13) **Choice C is correct.** **(8.GSR.8.2)** Let the angle be x . Its supplement is $180 - x$. So $x = (180 - x) + 8 \Rightarrow x = 188 - x \Rightarrow 2x = 188 \Rightarrow x = 94^\circ$.
- 14) **Choice C is correct.** **(8.GSR.8.4)** $V = \frac{1}{3} \times B \times h \Rightarrow 500 = \frac{1}{3} \times 100 \times h \Rightarrow h = 15$ m.
- 15) **Choice C is correct.** **(8.GSR.8.2)** Triangle = $\frac{1}{2} \times 6 \times 8 = 24$ in². Rectangle = $6 \times 2 = 12$ in². Total = $24 + 12 = 36$ in².
- 16) **Choice B is correct.** **(8.FGR.6.3)** Sum of known: $80 + 108 + 126 + 117 + 119 = 550^\circ$. Sixth angle: $720 - 550 = 170^\circ$.
- 17) **The correct answer is 14.** **(8.FGR.5.1)** Substitute $x = 5$ into the function: $y = 3(5) - 1 = 15 - 1 = 14$.
- 18) **Choice A is correct.** **(8.FGR.6.4)** The rate of change is not constant, showing a curved or leveling pattern rather than a straight line. This indicates a nonlinear association.
- 19) **The correct answer is B, C.** **(8.PAR.3.3)** $(x + 6)^2 = (x + 6)(x + 6) = x^2 + 12x + 36$. Choice B is the expanded form, and choice C is the factored form. Choice A ignores the middle term. Choice D has an error. Choice E is a different factorization that does not equal $(x + 6)^2$.
- 20) **Choice C is correct.** **(8.FGR.6.4)** Marginal relative frequency for sports: $\frac{220}{400} = 0.55$. This is the column-total ratio.
- 21) **Choice A is correct.** **(8.FGR.6.3)** Deviations from 5.2 are 3.2, 3.2, 1.2, 1.2, 1.2, 0.8, 0.8, 0.8, 2.8, 2.8. Their sum is 17.6, so the MAD is $17.6 \div 10 = 1.76$.
- 22) **Choice B is correct.** **(8.GSR.8.2)** Two of the five sections are shaded, so $P(\text{shaded}) = \frac{2}{5}$.
- 23) **Choice A is correct.** **(8.FGR.6.1)** Real-world data rarely fits a perfect line. A trend line balances passing close to all points, even if it doesn't pass through every one.
- 24) **Choice B is correct.** **(8.GSR.8)** Set up proportion: $\frac{3}{7} = \frac{x}{21}$. Cross-multiply: $3 \times 21 = 7x \Rightarrow 63 = 7x \Rightarrow x = 9$.
- 25) **Choice D is correct.** **(8.NR.1.1)** The sum of a rational and an irrational number is always irrational. For example, $2 + \sqrt{3}$ is irrational. Similarly, $b - a$ is irrational, but products can vary.
- 26) **The correct answer is 1.** **(8.FGR.5.4)** Slope of f : 2. Other slope: $(7 - 1)/2 = 3$. Difference: $3 - 2 = 1$.



Hi, Persistent Problem Solver!

◇ Some Grade 8 questions ask you to hold several ideas in your mind at once. That can feel hard, and that is exactly why practice matters. ◇

★ **Remember this:** You showed persistence by continuing through the set. That habit is powerful because difficult problems often open after one more good attempt. You practiced across 5 full Grade 8 practice tests, and that repeated effort matters. ★

Persistence Tools

- **Try a Smaller Case:** Use an easier number to see the pattern.
- **Draw It:** Make the situation visible.
- **Restate It:** Say the question in your own words.
- **Check One Step:** Fix the first unclear place.

Grade 8 test-day tip: When stuck, do not restart everything. Find the first step you trust, then rebuild from there.

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

Jay Daie

Your Persistence Coach

Practice Today. Succeed Tomorrow!

Give your child the confidence and skills they need with **5 full-length Grade 8 Math** practice tests that reflect real test formats and cover all key math standards. Perfect for building skills, strengthening problem-solving abilities, and achieving success on test day!



WHAT'S INSIDE?



Standards-Aligned Practice

Questions designed to cover essential Grade 8 math standards.



Variety of Question Types

Multiple-choice, short answer, and more to build well-rounded skills.



Real-World Applications

Engaging problems that connect math to everyday life.



Step-by-Step Progress

Track improvement and build confidence with every test.

COVERS ALL ESSENTIAL TOPICS

- | | |
|---------------------------------------|----------------------------|
| ✓ The Number System | ✓ Statistics & Probability |
| ✓ Expressions & Equations | ✓ Pythagorean Theorem |
| ✓ Ratios & Proportional Relationships | ✓ Volume & Surface Area |
| ✓ Linear Equations | ✓ Transformations |
| ✓ Functions | ✓ Inequalities |
| ✓ Geometry | ✓ Data Analysis & Graphing |
| ✓ Measurement & Data | ✓ And More! |

5
PRINTED
TESTS



2 ONLINE
TESTS



Use these two additional online practice tests for **extra review** after the **printed tests** in this book.