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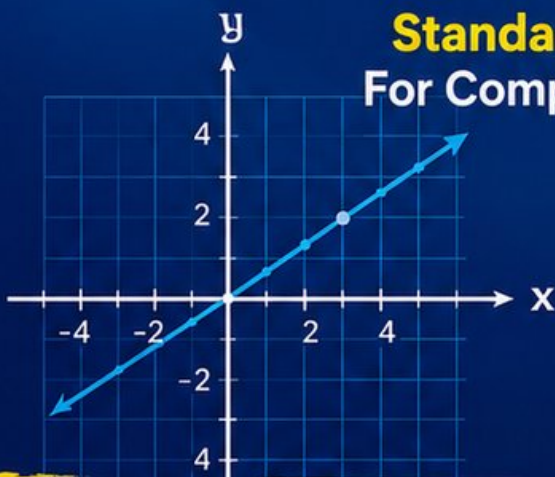
Georgia Milestones

Grade 8

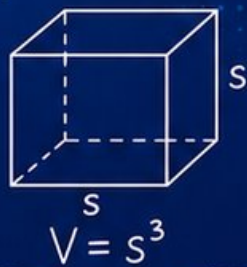
MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs



$$2x + 3y = 12$$
$$y = mx + b$$



**9 PRINTED
TESTS**

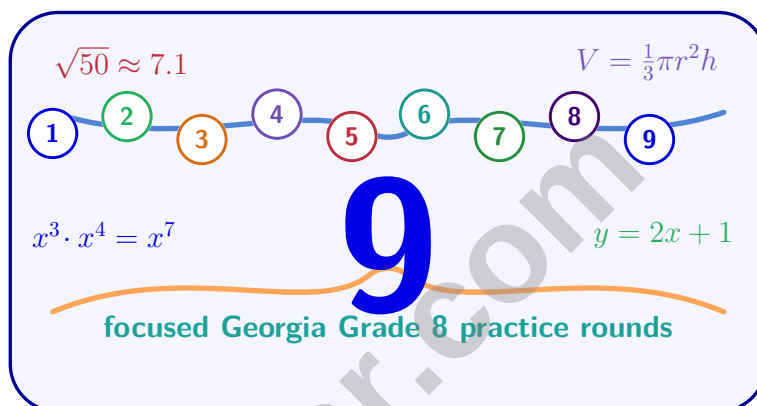


**2 ONLINE
TESTS**

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

9 Georgia Milestones Grade 8 Math Practice Tests

Purposeful Georgia Grade 8 Math Prep for Reasoning, Modeling, and Problem Solving



Nine 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



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Welcome, Georgia Grade 8 Problem Solver!

Nine focused rounds for sharper Milestones math thinking

This book gives you nine 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 nine-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?

Nine Milestones tests, 360 questions, and a complete review path

Part	What You Will Practice
Tests 1–3	Real and irrational numbers, integer exponents, scientific notation, equations, and careful reading.
Tests 4–6	Slope, systems of equations, functions, inequalities, transformations, congruence, and similarity.
Tests 7–9	Pythagorean reasoning, volume, data analysis, linear models, probability, mixed review, and stamina.
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.



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- 1) A triangle with vertices at $(1, 0)$, $(3, 0)$, and $(2, 2)$ is reflected across the x -axis. What is the y -coordinate of the image of the vertex originally at $(2, 2)$?
- ☐ A. 2 ☐ C. 0
☐ B. -2 ☐ D. 4
- 2) A phone plan charges \$20 base plus \$0.10 per text. If you budget at most \$35, which inequality shows max texts?
- ☐ A. $0.10t + 20 > 35$ ☐ C. $0.10 + 20t \geq 35$
☐ B. $20t + 0.10 \leq 35$ ☐ D. $0.10t + 20 \leq 35$
- 3) For $-x + 2y > 4$, after rewriting to slope-intercept form $y > \frac{1}{2}x + 2$, which description matches the graph?
- ☐ A. Dashed line, shade above ☐ C. Solid line, shade above
☐ B. Dashed line, shade below ☐ D. Solid line, shade below
- 4) Two figures are related by a 90° counterclockwise rotation about the origin. If the pre-image has a side parallel to the x -axis, what is true about the corresponding side in the image?
- ☐ A. It is also parallel to the x -axis ☐ C. It forms a 45° angle with the axes
☐ B. It is parallel to the y -axis ☐ D. Its length becomes half
- 5) Which loan has the lowest total repayment cost for \$3,000 principal?
- ☐ A. 6% for 2 years ☐ C. 4% for 4 years
☐ B. 5% for 3 years ☐ D. 3% for 5 years



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6) Rewrite 6^{-3} using only positive exponents.

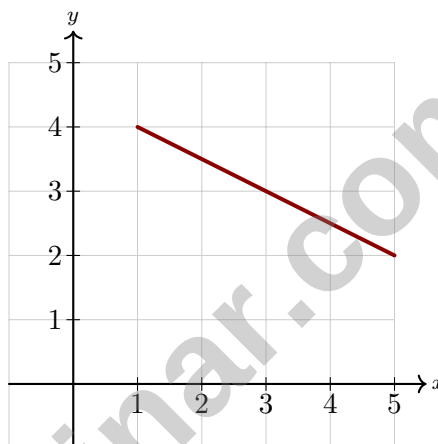
☐ A. $\frac{6}{3}$
☐ B. -6^3

☐ C. 6^3
☐ D. $\frac{1}{6^3}$

7) If $x^2 = 81$, what are the possible values of x ?

☐ A. 9 only
☐ B. -9 only

☐ C. 9 or -9
☐ D. 3 or -3



8)

What is the equation of the line shown?

☐ A. $y = -\frac{1}{2}x + \frac{9}{2}$
☐ B. $y = 2x + 2$

☐ C. $y = -2x + 6$
☐ D. $y = \frac{1}{2}x + 3$

9) Solve for x : $6x + 2 = 5x + 9$

☐ A. $x = 7$
☐ B. $x = -7$

☐ C. $x = 11$
☐ D. $x = 2$



10) Factor $4x + 12$ completely.

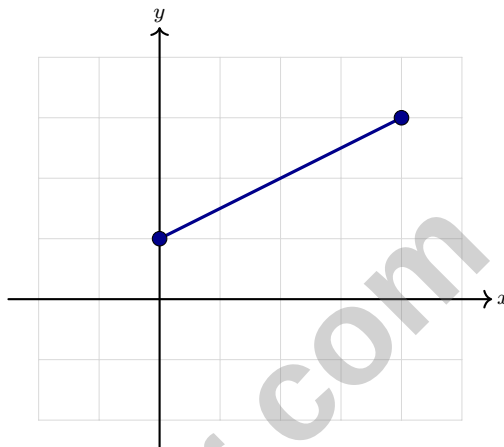
☐ A. $4(x + 3)$

☐ C. $12(x + 1)$

☐ B. $2(2x + 6)$

☐ D. $x + 12$

11) What is the domain of the graphed function?



☐ A. $\{0, 1, 2, 3, 4\}$

☐ C. $\{1, 3\}$

☐ B. $[0, 4]$

☐ D. All real numbers

12) Function through $(1, 4)$ and $(3, 8)$. Slope is?

☐ A. 1

☐ C. 3

☐ B. 2

☐ D. 4

13) In the list 5.2×10^{-2} , 5.2×10^0 , 5.2×10^2 , 5.2×10^{-1} , what is the exponent of the smallest number?

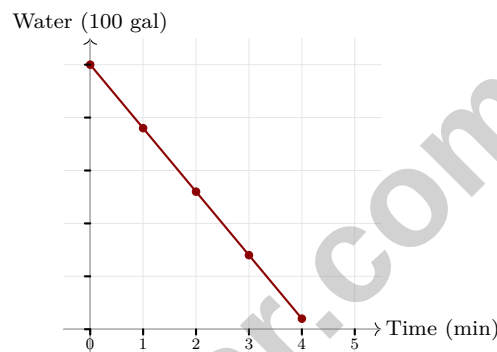


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1) Looking at the table below, is the function linear or nonlinear?

x	1	2	3	4
y	2	5	10	17
First diff.	3	5	7	

- ☐ A. Linear, because y increases
☐ B. Nonlinear, first differences are not constant
☐ C. Linear, because the table has 4 points
☐ D. Nonlinear, because $y > x$



2)

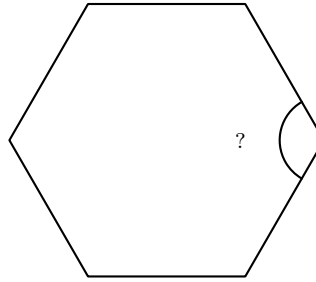
A water tank drains following the model $w = 500 - 120t$, where w is water remaining in gallons and t is time in minutes. What is the practical meaning of the -120 coefficient?

- ☐ A. 120 gallons of water remain at time 0
☐ B. 120 gallons drain per minute
☐ C. The tank holds 500 gallons total
☐ D. The tank is empty after 12 minutes

3) A pyramid is half-filled with sand. The pyramid's total volume is 360 ft^3 . How much sand is in the pyramid?

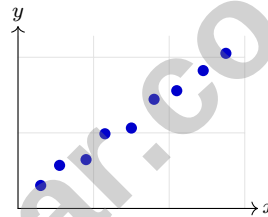
- ☐ A. 90 ft^3
☐ B. 120 ft^3
☐ C. 180 ft^3
☐ D. 240 ft^3





4)

A regular hexagon is shown with one interior angle marked. What is the measure of the marked interior angle?

☐ A. 100° ☐ C. 120° ☐ B. 110° ☐ D. 130° 

5)

A scatter plot shows the relationship between hours slept and memory test score for 25 students. The points form a clear upward trend with only a few points far from the trend line. This indicates:

☐ A. Weak correlation☐ C. Strong correlation☐ B. Moderate correlation☐ D. Perfect correlation

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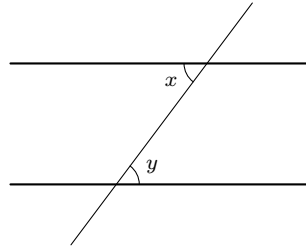
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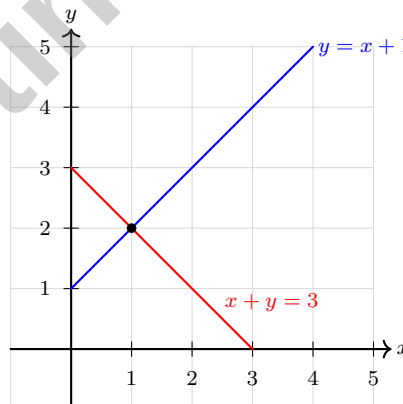
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- 1) In the diagram, angles x and y are formed by a transversal cutting parallel lines. If $x = 84^\circ$, what is y ?



- ☐ A. 84° ☐ C. 180°
☐ B. 96° ☐ D. 264°
- 2) A student states that the surface area of a cylinder with $r = 2$ and $h = 5$ is $SA = \pi r^2 + 2\pi rh = 4\pi + 20\pi = 24\pi$. What is the error?
- ☐ A. Used πr instead of πr^2 for one base ☐ C. The calculation is correct
☐ B. Forgot to count two circular bases ☐ D. Multiplied rh by 2 instead of 3
- 3) Use the graph below to find the solution to the system of $y = x + 1$ and $x + y = 3$.



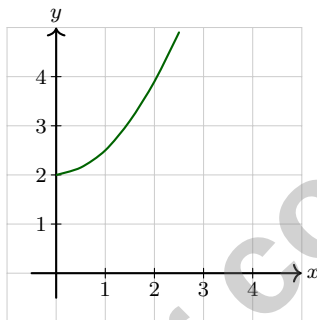
- ☐ A. $(1, 2)$ ☐ C. $(2, 1)$
☐ B. $(0, 3)$ ☐ D. $(3, 0)$



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- 4) A student's age is 4 years less than twice her brother's age. If the student is currently 14 years old, how old is her brother? Write an equation and solve.

- 5) Which graph shows a NONLINEAR function?



- ☐ A. No, it passes through $(0, 2)$
- ☐ B. Yes, the curve increases at an accelerating rate
- ☐ C. No, the relationship is still linear overall
- ☐ D. Yes, but only if $y > x$



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.



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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice B is correct.** (8.GSR.8) Reflection across the x -axis maps $(x, y) \rightarrow (x, -y)$. So $(2, 2) \rightarrow (2, -2)$, giving y -coordinate -2 .
- 2) **Choice D is correct.** (8.PAR.3.5) Base (20) plus texts at 0.10 each ($0.10t$), total at most 35.
- 3) **Choice A is correct.** (8.PAR.3.5) The $>$ symbol (strict) gives a DASHED line. Since y is GREATER than the expression, shade ABOVE.
- 4) **Choice B is correct.** (8.GSR.8) A 90° rotation turns horizontal lines vertical. A side parallel to the x -axis becomes parallel to the y -axis. Rotations preserve length and angles between sides.
- 5) **Choice A is correct.** (8.GSR.8.4) A: \$360 interest. B: \$450 interest. C: \$480 interest. D: \$450 interest. Option A has the lowest total cost.
- 6) **Choice D is correct.** (8.NR.2.1) Negative exponent rule: $6^{-3} = \frac{1}{6^3}$.
- 7) **Choice C is correct.** (8.NR.2.2) Both $9^2 = 81$ and $(-9)^2 = 81$, so both 9 and -9 are solutions.
- 8) **Choice A is correct.** (8.FGR.5.5) Using $(1, 4)$ and $(5, 2)$: slope = $\frac{2-4}{5-1} = -\frac{1}{2}$. Substituting: $4 = -\frac{1}{2}(1) + b$ gives $b = \frac{9}{2}$.
- 9) **Choice A is correct.** (8.PAR.3.2) Subtract $5x$ and 2: $x = 7$.
- 10) **Choice A is correct.** (8.PAR.3.3) GCF of $4x$ and 12 is 4. Factor: $4x + 12 = 4(x + 3)$.
- 11) **Choice B is correct.** (8.FGR.5.1) The segment starts at $x = 0$ and ends at $x = 4$. The domain includes all x -values in this range: $[0, 4]$.
- 12) **Choice B is correct.** (8.FGR.5.4) Slope = $(8 - 4)/(3 - 1) = 4/2 = 2$.
- 13) **The correct answer is -2 .** (8.NR.2.3) With the same coefficient, the smallest power has the smallest exponent: -2 .
- 14) **Choice A is correct.** (8.FGR.5.7) Slope is $m = \frac{11-5}{4-1} = \frac{6}{3} = 2$.
- 15) **Choice A is correct.** (8.GSR.8.2) From $(\sqrt{5})^2 + (\sqrt{20})^2 = c^2$, we get $5 + 20 = 25$, so $c = \sqrt{25} = 5$.
- 16) **Choice B is correct.** (8.FGR.6.3) Absolute deviations: $|3 - 6| = 3$, $|5 - 6| = 1$, $|7 - 6| = 1$, $|9 - 6| = 3$. Sum = 8. MAD = $8/4 = 2$.
- 17) **Choice C is correct.** (8.NR.1.2) $\sqrt{48} = 4\sqrt{3} \approx 4 \times 1.73 = 6.92 \approx 6.9$. Distractor B (7.0) confuses with nearby perfect square $\sqrt{49} = 7$; A and D are unreasonable bounds.
- 18) **Choice D is correct.** (8.NR.2.4) Add first: $(9 + 3.6) \times 10^5 = 12.6 \times 10^5 = 1.26 \times 10^6$. Then divide: $\frac{1.26 \times 10^6}{4 \times 10^2} = 0.315 \times 10^4 = 3.15 \times 10^3$.
- 19) **Choice C is correct.** (8.PAR.4.1) Slope = $\frac{2}{7} \approx 0.286 \approx 0.29$. This is a shallow line (slope less than 1).
- 20) **The correct answer is A,E.** (8.GSR.8.3) A is true because the distance formula applies the Pythagorean Theorem to the horizontal and vertical legs between two points. E is true because reversing the points only changes the signs of the differences, and squaring gives the same result. B and C are false because the formula works with positive or negative differences and coordinates. D is false because distances can be irrational, such as $\sqrt{50}$.
- 21) **Choice A is correct.** (8.FGR.7.2) From the second equation, $y = x - 4$. Substitute into the first: $\frac{1}{4}x + (x - 4) = 2$, so $\frac{5}{4}x = 6$, giving $x = \frac{24}{5}$. Then $y = \frac{24}{5} - 4 = \frac{24}{5} - \frac{20}{5} = \frac{4}{5}$.
- 22) **The correct answer is 7.1.** (8.NR.1.1) Since $7^2 = 49$ and $7.1^2 = 50.41$, we have $\sqrt{50}$ between 7.0 and 7.1, closer to 7.1. More precisely, $7.07^2 \approx 49.98 \approx 50$. To the nearest tenth, $\sqrt{50} \approx 7.1$.
- 23) **Choice D is correct.** (8.FGR.5.2) Constant first differences (whether positive or negative) indicate a linear function. The negative value indicates the function is decreasing.
- 24) **The correct answer is $\frac{1}{3}$.** (8.NR.1.1) Let $x = 0.\bar{3}$. Then $10x = 3.\bar{3}$, so $9x = 3$ and $x = \frac{1}{3}$.
- 25) **Choice B is correct.** (8.FGR.5.2) The constant segments at $y = 2$ and $y = 5$ stay below and above $y = 4$. The increasing segment must cross $y = 4$ exactly once.
- 26) **Choice B is correct.** (8.GSR.8) Reflection across an altitude of an equilateral triangle is a rigid motion that preserves all side lengths and angles. The resulting triangle is congruent to the original: sides of 6 cm and all angles 60° .
- 27) **Choice B is correct.** (8.GSR.8) Corresponding angles are congruent: $9t - 15 = 4t + 10 \Rightarrow 5t = 25 \Rightarrow t = 5$.



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A Note for a Careful Thinker

Hi, Careful Thinker!

◇ This high-stamina book gave you nine substantial Grade 8 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. This book gave you room to practice the kind of thinking eighth graders need: modeling linear relationships, solving systems, connecting algebra and geometry, and interpreting data. ◇

★ **Remember this:** The goal was never just to finish pages. The goal was to become the kind of student who knows how to begin, how to adjust, and how to check. ★

Your Careful-Thinking Toolkit

- **Read Twice:** First for the story, second for the math.
- **Label Values:** Give each number a job.
- **Check Signs:** Negatives and inequalities deserve attention.
- **Use Evidence:** Let the work prove the answer.

Grade 8 test-day tip: On test day, underline the question before solving. It keeps your answer aimed at the right target.

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

Jay Daie

Your Math Practice Coach

CONFIDENCE TODAY, SUCCESS TOMORROW!

GRADE

8

Help your child excel in math with **9 full-length Grade 8 practice tests** designed to reflect real test formats and cover all key math standards.

With a wide variety of questions and real-world applications, this book builds the skills and confidence students need to achieve their best!



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.



Build Skills & Boost Confidence

Strengthen understanding and feel prepared for test day.

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! |



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Use these two additional online practice tests for extra review after the printed tests.

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More Practice. More Confidence.
Better **Results.**