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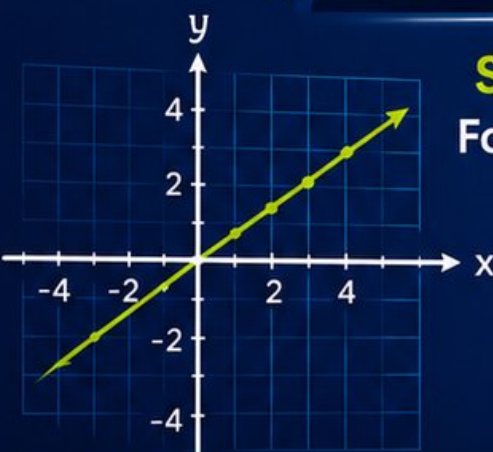
Georgia Milestones

GRADE 8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs



$$V = s^3$$



$$y = mx + b$$
$$2x + 5 = 13$$
$$x = 4$$



3 PRINTED
TESTS



2 ONLINE
TESTS



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

3 Georgia Milestones Grade 8 Math Practice Tests

Standards-Based Milestones Practice with Answer Explanations



Three 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!

Three focused rounds for sharper Milestones math thinking

This book gives you three 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 three-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?

Three Milestones tests, 120 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Real numbers, exponents, scientific notation, equations, and careful reading.
Test 3	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.



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Table of Contents

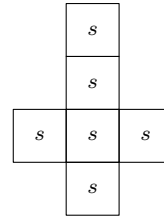


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1) Which is larger: $\sqrt{15}$ or $\sqrt{14}$?

- ☐ A. They are equal
☐ B. Cannot compare

- ☐ C. $\sqrt{14}$
☐ D. $\sqrt{15}$



Net of cube

2)

If the net above represents a cube with edge length 3 cm, what is the total surface area of the cube?

- ☐ A. 18 cm^2
☐ B. 27 cm^2

- ☐ C. 36 cm^2
☐ D. 54 cm^2

3) What is the slope of a line passing through the points (1, 2) and (3, 8)?

- ☐ A. 2
☐ B. -2

- ☐ C. $\frac{1}{3}$
☐ D. 3

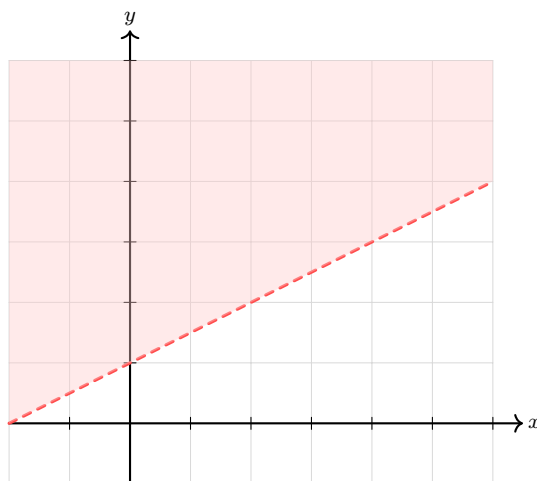
4) Which value of x satisfies $-x + 2 > 5$?

- ☐ A. $x = -4$
☐ B. $x = 0$

- ☐ C. $x = 4$
☐ D. $x = 8$



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5)

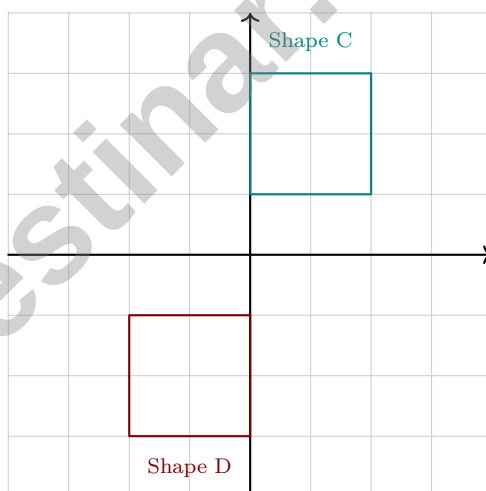
Based on the dashed line and shading above, the inequality is:

☐ A. $y > \frac{1}{2}x + 1$

☐ C. $y < \frac{1}{2}x + 1$

☐ B. $y \geq \frac{1}{2}x + 1$

☐ D. $y \leq \frac{1}{2}x + 1$



6)

If Shape C is rotated 180° about the origin, which shape results?

☐ A. Shape D

☐ D. A shape above the x -axis in Quadrant II

☐ B. The same shape (unchanged)

☐ C. A shape in Quadrant II


7) A student writes: $\frac{x^8}{x^2} = x^4$. What mistake did the student make?

- ☐ A. Added the exponents instead of subtracting.
- ☐ B. Multiplied the exponents instead of subtracting.
- ☐ C. Divided the exponents instead of subtracting.
- ☐ D. The student is correct.

8) Between which two consecutive integers does $\sqrt[3]{50}$ lie?

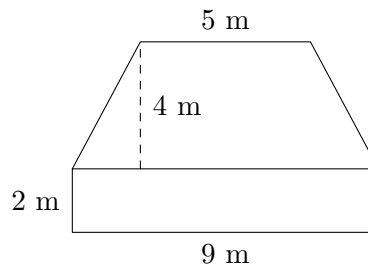


- ☐ A. 2 and 3
- ☐ B. 5 and 6
- ☐ C. 4 and 5
- ☐ D. 3 and 4
- 9) Consider the equation $3x + 7 = 3x + 2$. How many solutions does this have?
- ☐ A. One solution
- ☐ B. Cannot be determined
- ☐ C. Infinitely many solutions
- ☐ D. No solution
- 10) A virus has diameter 1.2×10^{-7} m. Bacteria has diameter 8×10^{-6} m. How many times larger is the bacterium than the virus?



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- 1) A composite figure has a trapezoid (parallel sides 5 m and 9 m, height 4 m) with a rectangle attached to the longer base (length 9 m, width 2 m). What is the total area?

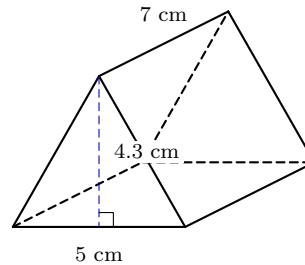


- ☐ A. 28 m^2
☐ C. 46 m^2
☐ B. 36 m^2
☐ D. 56 m^2
- 2) Convert $0.\overline{142857}$ (6-digit repeat) to a fraction.
- ☐ A. $\frac{1}{6}$
☐ C. $\frac{142857}{99999}$
☐ B. $\frac{142857}{100000}$
☐ D. $\frac{142857}{999999} = \frac{1}{7}$
- 3) Which order is correct from smallest to largest?
- ☐ A. $\sqrt{5}, \sqrt{3}, \sqrt{6}, \sqrt{4}$
☐ C. $\sqrt{4}, \sqrt{3}, \sqrt{5}, \sqrt{6}$
☐ B. $\sqrt{6}, \sqrt{5}, \sqrt{4}, \sqrt{3}$
☐ D. $\sqrt{3}, \sqrt{4}, \sqrt{5}, \sqrt{6}$
- 4) Sarah invests \$2,000 at 5% simple interest for 3 years. At the end of 3 years, she decides whether to withdraw all her money or let it grow another 3 years at the same rate. Which statement correctly predicts the impact of waiting another 3 years?
- ☐ A. No additional interest accrues after 3 years
 ☐ C. Interest compounds, so she earns more than \$300
☐ B. She will earn another \$600 in interest (total after 6 years: \$2,900)
 ☐ D. She will earn another \$300 in interest (total after 6 years: \$2,600)



5) Compare 3.2×10^5 and 5.1×10^4 . Which is larger?

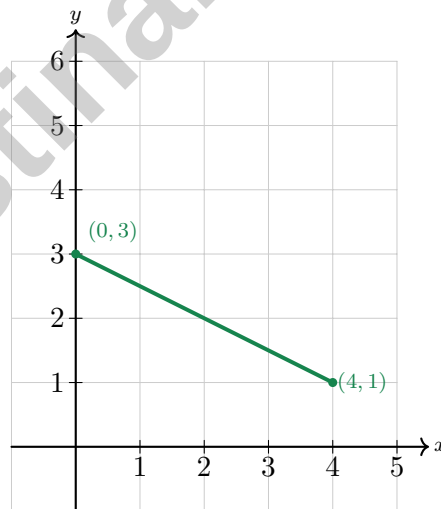
- ☐ A. Cannot be determined ☐ C. They are equal
☐ B. 5.1×10^4 ☐ D. 3.2×10^5



6)

A triangular prism has equilateral triangular bases with side length 5 cm (height ≈ 4.3 cm) and depth 7 cm. What is the approximate total surface area?

- ☐ A. 21.5 cm^2 ☐ C. 126.5 cm^2
☐ B. 43 cm^2 ☐ D. 172.5 cm^2



7)

What is the equation of the line shown?

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



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- 1) A security code consists of 3 digits, each from 0 to 9, with no repetition allowed. How many different codes are possible?

☐ A. $10^3 = 1,000$

☐ C. $10!$

☐ B. $10 \times 9 \times 8 = 720$

☐ D. $\binom{10}{3} = 120$

- 2) A scatter plot shows the relationship between hours studied (x) and test score (y). The line of best fit has the equation $y = 8x + 50$. What does the slope of 8 represent?

☐ A. For each hour studied, the test score increases by 8 points on average

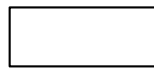
☐ C. The y-intercept is 8 units above the origin

☐ B. The test score when 8 hours are studied

☐ D. For each point increase in test score, hours studied increases by 8

- 3) A rectangle undergoes two successive dilations: first by scale factor $\frac{2}{3}$, then by scale factor $\frac{3}{2}$. If the original rectangle has area 24 cm^2 , what is the final area?

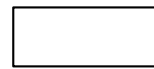
Original

Step 0: $A_0 = 24 \text{ cm}^2$

After 1st dilation

Step 1: $k_1 = \frac{2}{3}$

After 2nd dilation

Step 2: $k_2 = \frac{3}{2}$

☐ A. 24 cm^2

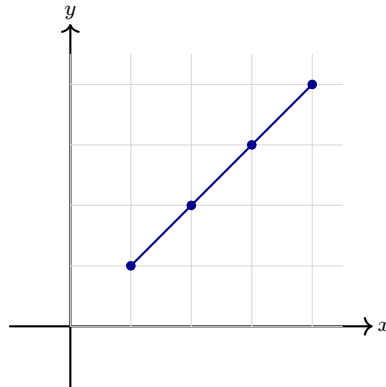
☐ C. 32 cm^2

☐ B. 16 cm^2

☐ D. 54 cm^2



4) The graph shows function h . Which of the following is true?



☐ A. $h(2) = 3$

☐ B. $h(1) = 1$

☐ C. $h(3) = 2$

☐ D. $h(4) = 3$

5) Which of the following is rational?

☐ A. π

☐ B. $\sqrt{15}$

☐ C. $0.101001000\dots$ (non-repeating)

☐ D. $\sqrt{36}$

6) A bakery produces 50 cookies per hour. After 4 hours, how many cookies have been produced?

7) What fraction equals $0.8\overline{3}$?

☐ A. $\frac{83}{100}$

☐ B. $\frac{83}{99}$

☐ C. $\frac{8}{30}$

☐ D. $\frac{75}{90} = \frac{5}{6}$



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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 D is correct.** (8.NR.1.2) Since the square root function is increasing and $15 > 14$, we have $\sqrt{15} > \sqrt{14}$.
- 2) **Choice D is correct.** (8.GSR.8.4) The net shows all 6 faces of a cube. Each face has area $3^2 = 9 \text{ cm}^2$. Total surface area $= 6 \times 9 = 54 \text{ cm}^2$.
- 3) **Choice D is correct.** (8.FGR.5.5) Slope $= \frac{y_2 - y_1}{x_2 - x_1} = \frac{8 - 2}{3 - 1} = \frac{6}{2} = 3$.
- 4) **Choice A is correct.** (8.PAR.3.5) Solving $-x + 2 > 5$ gives $-x > 3$, so $x < -3$. Only $x = -4$ satisfies this (since $-4 < -3$).
- 5) **Choice A is correct.** (8.PAR.3.5) DASHED line (strict inequality) and shading ABOVE (greater than) indicate $y > \frac{1}{2}x + 1$.
- 6) **Choice A is correct.** (8.GSR.8) A 180° rotation about the origin takes a point in Quadrant I to Quadrant III. Shape C's corner at $(2, 3)$ maps to $(-2, -3)$, matching Shape D.
- 7) **Choice C is correct.** (8.NR.2.1) Correct answer: $\frac{x^8}{x^2} = x^{8-2} = x^6$, not x^4 . The student likely divided: $8 \div 2 = 4$.
- 8) **Choice D is correct.** (8.NR.2.2) $3^3 = 27$ and $4^3 = 64$. Since $27 < 50 < 64$, we have $3 < \sqrt[3]{50} < 4$.
- 9) **Choice D is correct.** (8.PAR.3.2) Subtract $3x$: $7 = 2$, which is false. No value of x satisfies this equation.
- 10) **The correct answer is 66.67.** (8.NR.2.3) Divide: $\frac{8 \times 10^{-6}}{1.2 \times 10^{-7}} = \frac{8}{1.2} \times 10^1 = 6.67 \times 10^1 \approx 66.67$.
- 11) **Choice C is correct.** (8.FGR.7.2) A horizontal line $y = 2$ and a vertical line $x = 2$ intersect at exactly one point: $(2, 2)$.
- 12) **The correct answer is $\frac{34}{99}$.** (8.NR.1.1) Set $x = 0.\overline{34}$, so $100x = 34.\overline{34}$. Subtracting: $100x - x = 34$, giving $99x = 34$ and $x = \frac{34}{99}$.
- 13) **Choice A is correct.** (8.PAR.3.3) Area $= (2x + 1)(x + 3) = 2x^2 + 6x + x + 3 = 2x^2 + 7x + 3 \text{ m}^2$.
- 14) **Choice A is correct.** (8.FGR.5.1) The ratio is 2 cups flour : 3 eggs. For e eggs, flour needed is $\frac{2}{3} \times e = \frac{2e}{3}$.
- 15) **Choice A is correct.** (8.FGR.5.4) Slope: $(5 - 3)/(2 - 1) = 2$. From $(1, 3)$: $3 = 2(1) + b \Rightarrow b = 1$. So $y = 2x + 1$.
- 16) **Choice A is correct.** (8.FGR.5.2) For a linear function, the differences between consecutive y -values are constant. Here: $7 - 3 = 4$, $11 - 7 = 4$, $15 - 11 = 4$. A constant first difference indicates linearity.
- 17) **Choice A is correct.** (8.FGR.5.7) For $x = 0$, $y = -5$. For $x = 2$, $y = 1$. For $x = 5$, $y = 10$. The sum is $-5 + 1 + 10 = 6$.
- 18) **The correct answer is A, C.** (8.NR.1.1) $\sqrt{169} = 13$ is rational (perfect square). The repeating decimal $0.777\ldots = \frac{7}{9}$ is rational. The other values are irrational: $\sqrt{170}$ (non-perfect square), 2π (irrational multiple of π), and $\sqrt{2} + 1$ (irrational plus rational is irrational).
- 19) **Choice B is correct.** (8.FGR.5.2) The graph shows a flat horizontal line from week 3 to week 5 at 4 mph, indicating no change in speed. This is the maintenance phase after rapid early gains.
- 20) **Choice B is correct.** (8.GSR.8) Comparing the two squares: ABCD (lower left on the grid) and EFGH (upper right) have identical side lengths and the same orientation. The vertices align: A is at $(0, 0)$ and E is at $(4, 3)$, indicating a translation 4 units right and 3 units up. Translation is a rigid motion that preserves all distances and angles, so no rotation or reflection is needed.
- 21) **Choice C is correct.** (8.GSR.8) The rule $(x, y) \rightarrow (-x, -y)$ describes a 180° rotation about the origin. So $(3, 5) \rightarrow (-3, -5)$.
- 22) **Choice B is correct.** (8.GSR.8) Alternate exterior angles are congruent: $7k - 3 = 5k + 17 \Rightarrow 2k = 20 \Rightarrow k = 10$.
- 23) **Choice A is correct.** (8.GSR.8.2) Using $a^2 + b^2 = c^2$: $14^2 + 48^2 = 196 + 2304 = 2500$, so $c = 50$ (scaled 7-24-25 triple).
- 24) **Choice A is correct.** (8.GSR.8.3) $d = \sqrt{(9 - 1)^2 + (8 - 2)^2} = \sqrt{8^2 + 6^2} = \sqrt{64 + 36} = \sqrt{100} = 10$ units.
- 25) **Choice C is correct.** (8.GSR.8.4) Radius $r = 6$ ft. From $V = \pi r^2 h$: $1130.4 = 3.14 \times 36 \times h \Rightarrow h = \frac{1130.4}{113.04} = 10$ ft.
- 26) **Choice C is correct.** (8.GSR.8.2) Alternate interior angles are congruent when a transversal cuts parallel lines. So $w = 95^\circ$.
- 27) **Choice C is correct.** (8.GSR.8.4) Use $V = \frac{1}{3}Bh$: $192 = \frac{1}{3}B(12)$, so $B = 48 \text{ m}^2$. For a square base, $s^2 = 48$, so $s = \sqrt{48} = 4\sqrt{3} \text{ m}$.



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Hi, Grade 8 Math Star!

◇ You finished this practice set with real effort. Grade 8 math asks you to connect ideas, explain your thinking, and stay steady through multi-step problems. ◇

★ **Remember this:** Every page you completed helped build stronger habits: reading carefully, choosing a method, showing work, and checking whether the answer makes sense. You practiced across 3 full Grade 8 practice tests, and that repeated effort matters. ★

What You Built

- **Focus:** You stayed with challenging questions.
- **Accuracy:** You learned to slow down when details matter.
- **Reasoning:** You practiced explaining why a method works.
- **Readiness:** You are more prepared than when you started.

Grade 8 test-day tip: Before test day, review the questions that made you pause. Those are the best teachers.

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

Jay Daie

Your Grade 8 Math Friend

PRACTICE TODAY, ACHIEVE TOMORROW!

GRADE
8

Give your child the edge they need with **3 full-length** Grade 8 Math practice tests that reflect real test formats and cover all key math standards. Perfect for building skills, boosting confidence, and preparing for 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.



Build Skills & Boost Confidence

Strengthen understanding and feel prepared for test day.

COVERS ALL ESSENTIAL TOPICS

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



2 Extra Online Practice Tests Included!

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

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PRACTICE. PREPARE. SUCCEED.



Testinar

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