

6 Georgia Milestones

GRADE 8 MATH PRACTICE TESTS

Standards Aligned Problem Solving For
Comprehensive Assessment Programs



6 PRINTED
TESTS



2 ONLINE
TESTS



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

6 Georgia Milestones Grade 8 Math Practice Tests

Grade 8 Math Review with Mixed Practice, Keys, and Step-by-Step Explanations



Six 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!

Six focused rounds for sharper Milestones math thinking

This book gives you six 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 six-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?

Six Milestones tests, 240 questions, and a complete review path

Part	What You Will Practice
Tests 1–3	Real numbers, exponents, scientific notation, equations, and careful reading.
Tests 4–6	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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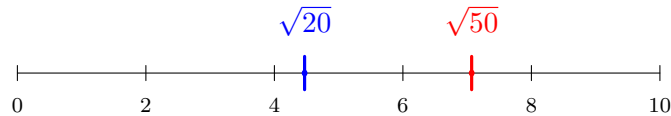
1) Which number lies between 3 and 4?

☐ A. $\sqrt{8}$

☐ C. $\sqrt{20}$

☐ B. $\sqrt{25}$

☐ D. $\sqrt{13}$



2)

Based on the number line, which statement is true?

☐ A. Cannot determine

☐ C. They are equal

☐ B. $\sqrt{50} < \sqrt{20}$

☐ D. $\sqrt{20} < \sqrt{50}$

3) Which is the best estimate of $2\sqrt{7}$?

☐ A. 3.5

☐ C. 7.0

☐ B. 14.0

☐ D. 5.2

4) A person compares two loans for \$2,000:

Loan	APR	Term
X	5%	2 years
Y	4%	3 years

If the person wants to minimize total borrowing cost, which loan is better?

☐ A. Need more information

☐ C. They cost the same

☐ B. Loan Y

☐ D. Loan X


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5) What is the value of 8^0 ?

☐ A. 0

☐ C. 8

☐ B. Undefined

☐ D. 1

6) A residual plot has residuals 1, -2, 1, 2, -1, 0. What is the greatest absolute residual?

7) What is $\sqrt{225}$?

☐ A. 13

☐ C. 15

☐ B. 14

☐ D. 16

8) Two fair coins are flipped. What is the probability of getting exactly one heads?
Write your answer as a fraction.

9) Which error did the student make when converting 0.000891 to scientific notation?
Student wrote: 8.91×10^{-3} instead of 8.91×10^{-4} .

☐ A. Moved decimal the wrong direction

☐ C. Wrong sign on exponent

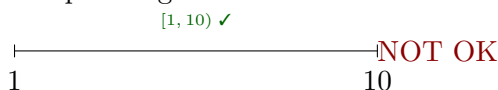
☐ B. Coefficient outside [1, 10)

☐ D. Counted decimal places incorrectly



10) Which expression is NOT in proper scientific notation?

Proper range for coefficient:



- ☐ A. 9.5×10^{-3}
☐ C. 1×10^6
☐ B. 10.2×10^4
☐ D. 5.67×10^0
- 11) A car travels at a constant speed. In 2 hours, it covers 110 miles. What is the constant of proportionality (unit rate)?
- ☐ A. 45 mph
 ☐ C. 55 mph
☐ B. 50 mph
 ☐ D. 60 mph
- 12) Multiply: $(2x + 1)(x + 3)$
- ☐ A. $2x^2 + 3x + 3$
☐ C. $2x^2 + 7x + 3$
☐ B. $2x^2 + 6x + 1$
☐ D. $3x^2 + 3x + 1$
- 13) The equation $y = 12x + 50$ represents a driver's earnings in dollars, where x is the number of hours worked. What does the slope 12 represent?
- ☐ A. Hourly wage of \$12
 ☐ C. Initial debt of \$12
☐ B. Total earnings of \$12
 ☐ D. Number of hours worked
- 14) A line passes through the points $(2, 5)$ and $(6, 13)$. What is the slope of the line?
- ☐ A. $\frac{1}{2}$
☐ C. $\frac{3}{2}$
☐ B. 4
 ☐ D. 2



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1) Which point is on the boundary line of $3x - y = 9$ but NOT in the solution region of $3x - y < 9$?

☐ A. (3, 0)

☐ C. (1, 6)

☐ B. (0, 9)

☐ D. (2, 1)

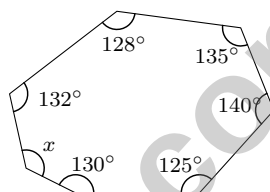
2) A line segment from (0, 0) to (4, 4) is dilated by scale factor 0.5 from the origin. Where does it map to?

☐ A. From (0, 0) to (2, 2)

☐ C. From (2, 2) to (4, 4)

☐ B. From (0, 0) to (8, 8)

☐ D. Remains the same



3)

A heptagon has six interior angles: 130° , 125° , 140° , 135° , 128° , 132° . Find the seventh angle.

☐ A. 100°

☐ C. 110°

☐ B. 105°

☐ D. 115°

4) A two-way table shows that 30 students like pizza and 20 like sandwiches. 15 of those who like pizza are girls. What is the relative frequency of girls among pizza-likers?

	Girls	Total
Pizza	15	30
Sandwiches	–	20

☐ A. 50%

☐ C. 30%

☐ B. 60%

☐ D. 75%



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5)

Test Scores	88	92	90	86	94
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Five students scored as shown. The mean is 90. Calculate the MAD.

☐ A. 2☐ C. 2.4☐ B. 3☐ D. 4

6) A number is chosen randomly from 1 to 10. What is the probability of choosing a prime number OR an even number?

☐ A. $\frac{7}{10}$ ☐ C. $\frac{5}{10}$ ☐ B. $\frac{4}{5}$ ☐ D. $\frac{6}{10}$

7) How many ways can a teacher select and arrange 3 students from a class of 8 to sit in the front row?

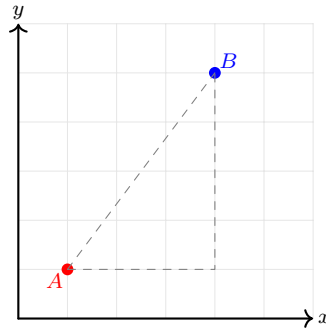
☐ A. $\binom{8}{3} = 56$ ☐ C. $8^3 = 512$ ☐ B. $8 \times 7 \times 6 = 336$ ☐ D. $8! = 40,320$

8) A right triangle has a hypotenuse of 25 meters and one leg of 7 meters. What is the length of the other leg?

9) A scientist collected data on plant height (cm) versus days of growth. Which scatter plot shows a trend line that is a POOR fit?

☐ A. Points spread far from the line with large vertical distances☐ C. Line passes through the center of the data cloud☐ B. Half the points are above the line and half are below☐ D. Points clustered tightly around the line with minimal scatter

1) What is the distance between $(-2, 3)$ and $(1, 7)$?



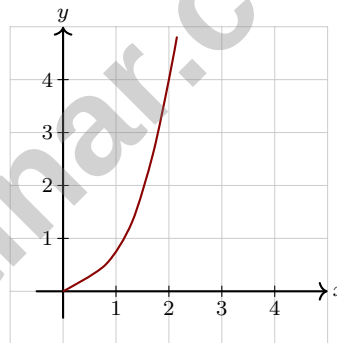
☐ A. 5

☐ C. $\sqrt{21}$

☐ B. 25

☐ D. 4

2) Which graph represents a NONLINEAR function?



☐ A. Yes, the curve is parabolic

☐ C. Yes, it only has positive y -values

☐ B. No, it starts at the origin

☐ D. No, the points are integers

3) An isosceles triangle has a vertex angle of 40° . What is the measure of each base angle?

☐ A. 50°

☐ C. 70°

☐ B. 60°

☐ D. 80°



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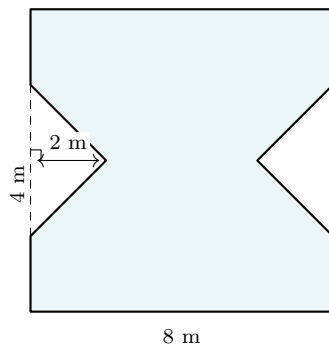
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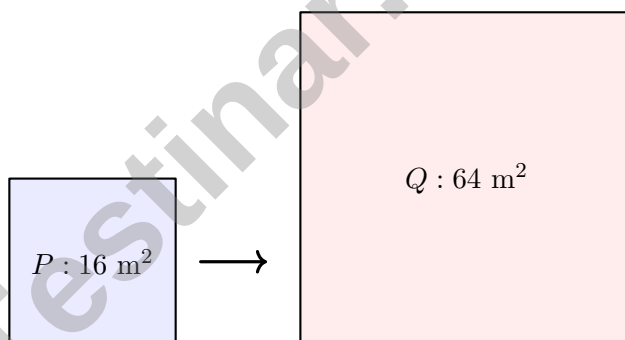
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- 4) A composite figure has a square (8 m by 8 m) with two opposite triangular notches cut out (each 4 m base, 2 m height). What is the remaining area?



- ☐ A. 56 m^2
☐ C. 64 m^2
☐ B. 60 m^2
☐ D. 72 m^2
- 5) Figure P has area 16 m^2 and Figure Q (similar to P) has area 64 m^2 . What is the scale factor from P to Q ?



- ☐ A. 2
 ☐ C. 8
☐ B. 4
 ☐ D. 16



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.1.1)** Since $3^2 = 9$ and $4^2 = 16$, any square root between $\sqrt{9}$ and $\sqrt{16}$ lies between 3 and 4. Because 13 is between 9 and 16, $\sqrt{13}$ is between 3 and 4. Also, $\sqrt{8} \approx 2.83$, $\sqrt{13} \approx 3.61$, $\sqrt{20} \approx 4.47$, and $\sqrt{25} = 5$, so only $\sqrt{13}$ is in the interval from 3 to 4.
- 2) **Choice D is correct.** **(8.NR.1.2)** Since the square root function is increasing and $20 < 50$, we have $\sqrt{20} < \sqrt{50}$. The number line shows $\sqrt{20} \approx 4.5$ and $\sqrt{50} \approx 7.1$, confirming $\sqrt{20} < \sqrt{50}$.
- 3) **Choice D is correct.** **(8.NR.1.2)** $\sqrt{7} \approx 2.646$, so $2\sqrt{7} \approx 5.29$.
- 4) **Choice D is correct.** **(8.GSR.8.4)** Loan X costs \$200 in interest; Loan Y costs \$240. Loan X is cheaper overall.
- 5) **Choice D is correct.** **(8.NR.2.1)** Any nonzero number raised to the power 0 equals 1: $8^0 = 1$.
- 6) **The correct answer is 2.** **(8.FGR.6.1)** The largest absolute value among the residuals is 2.
- 7) **Choice C is correct.** **(8.NR.2.2)** $15 \times 15 = 225$, so $\sqrt{225} = 15$.
- 8) **The correct answer is $\frac{1}{2}$.** **(8.GSR.8.2)** Sample space: HH, HT, TH, TT. Exactly one heads: HT, TH. That's 2 of 4. $P = \frac{1}{2}$.
- 9) **Choice D is correct.** **(8.NR.2.3)** 0.000891 requires moving the decimal 4 places right to get 8.91, so it is 8.91×10^{-4} , not 8.91×10^{-3} .
- 10) **Choice B is correct.** **(8.NR.2.4)** Scientific notation requires the coefficient to be in the range $[1, 10)$. In choice B, $10.2 \geq 10$, so it is not in standard form. It should be 1.02×10^5 .
- 11) **Choice C is correct.** **(8.PAR.4.1)** Unit rate $k = \frac{110}{2} = 55$ miles per hour. The proportional equation is $d = 55t$.
- 12) **Choice C is correct.** **(8.PAR.3.3)** FOIL: $(2x + 1)(x + 3) = 2x^2 + 6x + x + 3 = 2x^2 + 7x + 3$.
- 13) **Choice A is correct.** **(8.FGR.5.7)** In $y = mx + b$, the slope m is the rate of change per unit of x . Here, for each additional hour worked, earnings increase by \$12, so the slope represents the hourly wage.
- 14) **Choice D is correct.** **(8.FGR.5.7)** Slope $= \frac{y_2 - y_1}{x_2 - x_1} = \frac{13 - 5}{6 - 2} = \frac{8}{4} = 2$.
- 15) **Choice C is correct.** **(8.FGR.7.1)** Let m = number of months. Plan A costs $50 + 10m$. Plan B costs $20m$. Setting equal: $50 + 10m = 20m$, so $50 = 10m$, giving $m = 5$ months.
- 16) **The correct answer is 24.** **(8.NR.1.1)** Calculate the factorial: $4! = 4 \times 3 \times 2 \times 1 = 24$ different arrangements.
- 17) **Choice A is correct.** **(8.FGR.5.1)** Solve $5x - 3 = 12$: add 3 to both sides to get $5x = 15$, so $x = 3$.
- 18) **Choice C is correct.** **(8.GSR.8.4)** Lateral area $= 2(10)(4) + 2(6)(4) = 80 + 48 = 128 \text{ cm}^2$ ✓. Area of two bases $= 2(10)(6) = 120 \text{ cm}^2$. Total $= 128 + 120 = 248 \text{ cm}^2$.
- 19) **Choice C is correct.** **(8.GSR.8)** A 180° rotation maps $(x, y) \rightarrow (-x, -y)$, placing the image on the opposite side of the origin. Single reflections across axes do not have this property.
- 20) **Choice D is correct.** **(8.FGR.5.5)** The y -intercept is the constant term b in $y = mx + b$, which is 4.
- 21) **Choice A is correct.** **(8.PAR.3.2)** Base cost is \$30. Each text adds \$0.15. Total is \$45, so $30 + 0.15t = 45$.
- 22) **The correct answer is A, C.** **(8.GSR.8)** Incorrect: (A) All linear measurements (sides, perimeter) are multiplied by 2.5. (C) Area is multiplied by $(2.5)^2 = 6.25$. Correct: (B) Angles are congruent in dilation, not scaled. (D) Perimeter is multiplied, not divided, by 2.5. (E) Dilation preserves shape; polygon type does not change.
- 23) **Choice C is correct.** **(8.PAR.3.5)** Distribute: $-3x + 6 \leq 9$. Subtract 6: $-3x \leq 3$. Divide by -3 and flip the inequality: $x \geq -1$.
- 24) **Choice B is correct.** **(8.PAR.3.5)** Check boundary: $-2(-1) + 1 = 2 + 1 = 3$. The point IS on $-2x + y = 3$. But for strict inequality $<$, the boundary is excluded, so $(-1, 1)$ is NOT in the solution.
- 25) **Choice B is correct.** **(8.GSR.8.4)** $V = \frac{4}{3}\pi r^3 = \frac{4}{3} \times 3.14 \times 4^3 = \frac{4}{3} \times 3.14 \times 64 \approx 267.95 \text{ cm}^3$.
- 26) **Choice C is correct.** **(8.GSR.8.4)** Pyramid: $V_{py} = \frac{1}{3} \times 36 \times 6 = 72 \text{ cm}^3$. Cube: $V_c = 6^3 = 216 \text{ cm}^3$. Ratio: $\frac{72}{216} = 1 : 3$.
- 27) **Choice C is correct.** **(8.FGR.6.4)** The points form an upward trend. As age increases, income increases, showing a positive correlation. Perfect would mean all points lie exactly on a line.



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The Power of Showing Work

Hi, Organized Solver!

◇ You practiced Grade 8 skills that often require more than one step. That means your written work matters. ◇

★ **Remember this:** Showing work is not extra. It is how you track your thinking, find errors, and prove that your answer did not happen by luck. You practiced across 6 full Grade 8 practice tests, and that repeated effort matters. ★

Organized Work Habits

- **One Line Per Step:** Keep the path readable.
- **Box the Answer:** Make the final result easy to find.
- **Use Labels:** Tell what each value represents.
- **Check the Path:** Follow your steps backward if needed.

Grade 8 test-day tip: When a problem has several steps, write less on each line. Space makes checking easier.

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

Jay Daie

Your Organized-Work Coach

PRACTICE TODAY. ACHIEVE TOMORROW.

6

Give your child the confidence and skills they need with **6 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 |
| | ✓ And More! |



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