

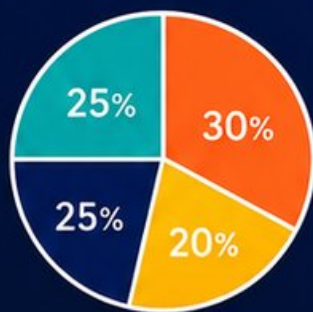
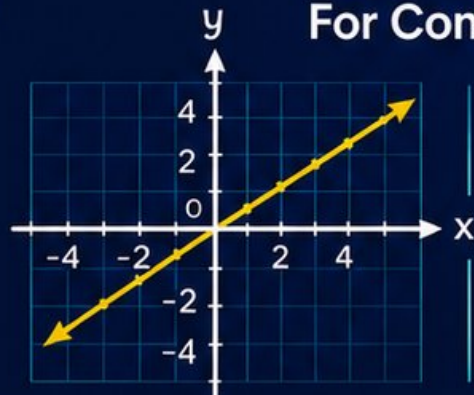
Georgia Milestones

GRADE 8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

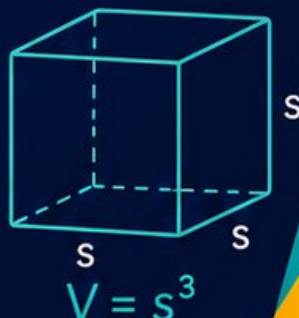


$$y = mx + b$$

$$2x - 3y = 6$$

$$\sqrt{x^2 + y^2}$$

$$A = bh$$



4 PRINTED TESTS



2 ONLINE TESTS



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



4 Georgia Milestones Grade 8 Math Practice Tests

Four Focused Milestones Tests for Real Numbers, Functions, and Geometry



Four 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!

Four focused rounds for sharper Milestones math thinking

This book gives you four 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 four-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?

Four Milestones tests, 160 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Real numbers, exponents, scientific notation, equations, and careful reading.
Tests 3–4	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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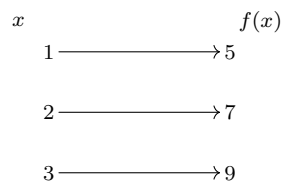
- 1) $\frac{2.8 \times 10^7}{7 \times 10^4} = ?$
- ☐ A. 0.4×10^3 ☐ C. 4×10^3
☐ B. 0.4×10^7 ☐ D. 4×10^2
- 2) A restaurant has 50 tables. Small tables seat 2 people; large tables seat 4 people. To seat at least 160 people, how many large tables are needed at minimum?
- ☐ A. 20 ☐ C. 30
☐ B. 25 ☐ D. 35
- 3) A line has slope -2 . Which pair of points could lie on this line?
- ☐ A. (1, 3) and (2, 5) ☐ C. (1, 1) and (3, 1)
☐ B. (0, 4) and (2, 0) ☐ D. (2, 5) and (3, 4)
- 4) Which of the following is the BEST description of what a small residual means?
- ☐ A. The data point is far from the trend line ☐ C. The slope of the line is steep
☐ B. The data point is very close to the trend line ☐ D. There is no correlation in the data
- 5) Rectangle X is similar to Rectangle Y . Rectangle X has perimeter 20 m. Rectangle Y has perimeter 50 m. What is the ratio of the side lengths (X to Y)?
- ☐ A. 2 : 5 ☐ C. 5 : 2
☐ B. 4 : 25 ☐ D. 25 : 4



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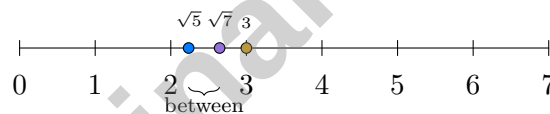
- 6) A student's grade model is $G = 2.5h + 55$, where G is the grade and h is hours spent studying. If the student studies for 12 hours, what is the predicted grade?

- 7) The mapping diagram shows function f . What is $f(2)$?



- ☐ A. 5
☐ B. 7

- ☐ C. 9
☐ D. 2



8)

Based on the number line, which statement is correct?

- ☐ A. $\sqrt{5}$ and $\sqrt{7}$ are both less than 1 ☐ C. 3 is irrational
☐ B. $\sqrt{7} > 3$ ☐ D. $2 < \sqrt{5} < \sqrt{7} < 3$

- 9) A restaurant offers 10 appetizers, 12 mains, 5 sides, and 6 desserts. A complete meal includes one appetizer, one side, and one dessert. How many different complete meals can be ordered?

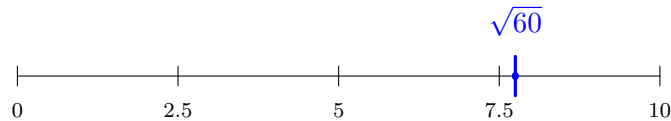
- ☐ A. $10 + 5 + 6 = 21$ ☐ C. $10 \times 5 \times 6 = 300$
☐ B. $10 \times 12 \times 5 \times 6 = 3,600$ ☐ D. $(10 + 12) \times 5 \times 6 = 660$



10) A repeating decimal $0.\overline{d_1d_2d_3}$ (3 digits) will have which denominator when fully simplified?

- ☐ A. Always exactly 999 (before simplification). ☐ C. A factor of 999 (could be 27, 37, 111, 333, 999, ...).
- ☐ B. Always exactly 1000. ☐ D. A factor of 1000 (could be 8, 125, 200, ...).

11)



Based on the number line, which decimal is closest to $\sqrt{60}$?

- ☐ A. 7.5 ☐ C. 7.8
- ☐ B. 7.9 ☐ D. 7.7
- 12) A survey asks 240 people about pet ownership. 144 own dogs, and of those, 108 also own cats. Calculate the relative frequency of people who own both dogs and cats among all dog owners. Express as a decimal.

13) Which is the best estimate of $\frac{\sqrt{10}}{\sqrt{2}}$?

- ☐ A. 1.4 ☐ C. 2.8
- ☐ B. 5.0 ☐ D. 2.2



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1) A cylinder with radius 8 m and height 6 m has a cone inscribed with the same base and height. What is the difference in their volumes? (Use $\pi \approx 3.14$.)

☐ A. 201.6 m^3

☐ C. 604.8 m^3

☐ B. 403.2 m^3

☐ D. 803.84 m^3

2) A pizza costs \$12 for each large pizza. How much do 3.5 large pizzas cost?

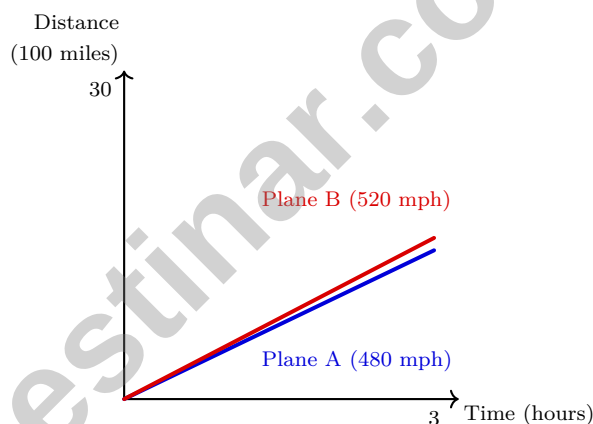
☐ A. \$36

☐ C. \$42

☐ B. \$39

☐ D. \$45

3) Two planes depart from the same airport at the same time, flying in opposite directions. Plane A flies at 480 mph; Plane B flies at 520 mph. The graph shows their positions over time.



After how many hours are the planes 3000 miles apart?

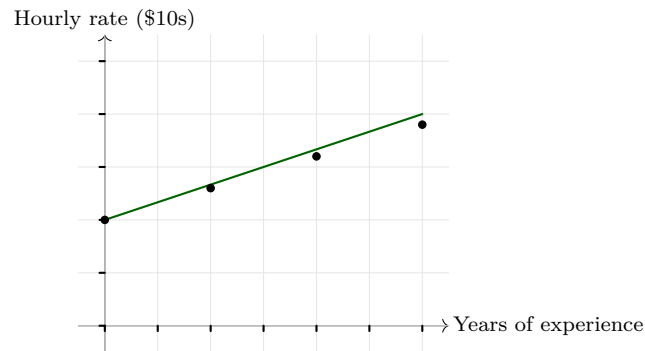
☐ A. 2.5 hours

☐ C. 3 hours

☐ B. 3.5 hours

☐ D. 4 hours





4)

A fitness trainer's hourly rate increases with years of experience: $R = 20 + 3x$, where R is hourly rate in dollars and x is years of experience. What is the rate for someone with 6 years of experience?

☐ A. \$32☐ C. \$38☐ B. \$50☐ D. \$60

5) A student incorrectly calculates the relative frequency of vegetarians among age 18–40 as $\frac{84}{112}$ instead of $\frac{84}{196}$. What error did the student make?

☐ A. Used the column total instead of the row total.☐ C. Used the column total instead of the grand total.☐ B. Used the grand total instead of the row total.☐ D. Forgot to convert to a percentage.

6) Find the Mean Absolute Deviation (MAD) of the data set $\{2, 4, 6, 8, 10\}$.

☐ A. 2☐ C. 3☐ B. 2.4☐ D. 6

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1) Solve for x : $0.2x + 1.5 = 2.5$

☐ A. $x = 5$

☐ B. $x = 10$

☐ C. $x = 0.5$

☐ D. $x = 20$

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

☐ A. 0.2×10^3

☐ B. 2.5×10^{-7}

☐ C. 2×10^3

☐ D. 7.5×10^{-7}

3) Two runners train with proportional relationships. Runner A: $y = 6x$ (miles per hour y at time x in hours). Runner B: $y = 8x$. Who runs faster?

☐ A. Runner A

☐ B. Cannot determine from the equations

☐ C. They run at the same speed

☐ D. Runner B

4) A store notices that for every 2 customers who enter, 1 item is sold. What is the slope of items sold versus customers?

☐ A. 2

☐ B. $-\frac{1}{2}$

☐ C. 3

☐ D. $\frac{1}{2}$

5) A coffee shop has fixed costs of \$400 per day and variable costs of \$2 per cup sold. If cups sell for \$5 each, about how many cups must be sold to break even?

☐ A. 100 cups

☐ B. 120 cups

☐ C. 134 cups

☐ D. 160 cups



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6) The table below shows values of function f . What is $f(2)$?

x	0	1	2	3
$f(x)$	5	7	9	11

☐ A. 7

☐ C. 11

☐ B. 9

☐ D. 5

7) In triangle ABC , angle $A = (2m+5)^\circ$, angle $B = (3m-10)^\circ$, and angle $C = (m+35)^\circ$. Find angle A .

☐ A. 45°

☐ C. 65°

☐ B. 55°

☐ D. 75°

8) A ladder leaning against a wall forms a right triangle. The ladder is 13 feet long (hypotenuse), and the base is 5 feet from the wall. How high up the wall does it reach?

☐ A. 8 feet

☐ C. 18 feet

☐ B. 12 feet

☐ D. 65 feet



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.2.4) Divide coefficients: $2.8 \div 7 = 0.4$. Subtract exponents: $10^{7-4} = 10^3$. Rewrite: $0.4 \times 10^3 = 4 \times 10^2$.
- 2) **Choice C is correct.** (8.FGR.7.1) Let l = large tables, so $50 - l$ tables are small. The seating capacity is $4l + 2(50 - l) = 100 + 2l$. Solve $100 + 2l \geq 160$, giving $2l \geq 60$ and $l \geq 30$.
- 3) **Choice B is correct.** (8.FGR.5.7) For option B, slope = $\frac{0 - 4}{2 - 0} = \frac{-4}{2} = -2$. The other choices have slopes 2, 0, and -1 .
- 4) **Choice B is correct.** (8.FGR.6.1) A small residual (absolute value close to zero) means the data point lies near the trend line, indicating a good fit at that point.
- 5) **Choice A is correct.** (8.GSR.8) Perimeter scales linearly with side lengths. Ratio of perimeters equals ratio of corresponding sides: $\frac{20}{50} = \frac{2}{5}$.
- 6) **The correct answer is 85.** (8.FGR.6.2) Substitute $h = 12$: $G = 2.5(12) + 55 = 30 + 55 = 85$.
- 7) **Choice B is correct.** (8.FGR.5.1) Follow the arrow from input 2 to output 7. Therefore, $f(2) = 7$.
- 8) **Choice D is correct.** (8.NR.1.1) From the number line, $\sqrt{5} \approx 2.236$ and $\sqrt{7} \approx 2.646$, both between 2 and 3. So $2 < \sqrt{5} < \sqrt{7} < 3$. All three numbers are plotted, and only 3 is rational; $\sqrt{5}$ and $\sqrt{7}$ are irrational.
- 9) **Choice C is correct.** (8.NR.1.1) Apply the Counting Principle: $10 \text{ appetizers} \times 5 \text{ sides} \times 6 \text{ desserts} = 300$ different meals.
- 10) **Choice C is correct.** (8.NR.1.1) The initial denominator is $999 = 3^3 \times 37$. After simplifying (if the GCD > 1), the denominator divides 999.
- 11) **Choice D is correct.** (8.NR.1.2) $7.7^2 = 59.29$ and $7.8^2 = 60.84$. The number 60 is a little closer to 59.29 than to 60.84, so $\sqrt{60} \approx 7.746$ is closer to 7.7 than to 7.8.
- 12) **The correct answer is 0.75.** (8.FGR.6.4) Among dog owners: $\frac{108}{144} = 0.75$. This is a row-conditional frequency.
- 13) **Choice D is correct.** (8.NR.1.2) $\frac{\sqrt{10}}{\sqrt{2}} = \sqrt{5} \approx 2.236$.
- 14) **Choice C is correct.** (8.GSR.8.4) Interest: $I = 5000 \times 0.05 \times 4 = \$1,000$. Total: $5000 + 1000 = \$6,000$.
- 15) **Choice D is correct.** (8.NR.2.3) Move the decimal 3 places right to get 4.2; the exponent is -3 since the original is less than 1.
- 16) **Choice B is correct.** (8.GSR.8.4) $SA = 2\pi r^2 + 2\pi rh = 2\pi(2)^2 + 2\pi(2)(6) = 8\pi + 24\pi \text{ in}^2$.
- 17) **Choice D is correct.** (8.FGR.5.5) Slope = $\frac{-2 - 4}{2 - (-1)} = \frac{-6}{3} = -2$.
- 18) **The correct answer is A,D.** (8.PAR.4.1) The line goes through $(0, 0)$ and $(8, 4)$, so the slope and constant of proportionality are $\frac{4}{8} = 0.5$. A point on the line must have $y = 0.5x$; when $x = 6$, $y = 3$, so $(6, 3)$ is on the line.
- 19) **Choice A is correct.** (8.PAR.3.5) Subtract 2: $5x > -10$. Divide by 5: $x > -2$.
- 20) **Choice A is correct.** (8.PAR.3.5) Substitute $(0, 0)$: $2(0) + 3(0) = 0$ ✓. The origin is on the line.
- 21) **Choice C is correct.** (8.GSR.8) A 90° counterclockwise rotation uses $(x, y) \rightarrow (-y, x)$. So $(3, -2) \rightarrow (-(-2), 3) = (2, 3)$.
- 22) **The correct answer is 5.** (8.FGR.6.3) Mean = 12.5. Deviations: $|5 - 12.5| = 7.5$, $|10 - 12.5| = 2.5$, $|15 - 12.5| = 2.5$, $|20 - 12.5| = 7.5$. Sum = 20. MAD = $20/4 = 5$.
- 23) **Choice D is correct.** (8.NR.2.1) Divide coefficients: $\frac{4}{2} = 2$. Divide powers: $\frac{x^5}{x^3} = x^2$. Result: $2x^2$.
- 24) **Choice D is correct.** (8.NR.2.2) $5^2 = 25$ and $6^2 = 36$. Since 35 is between these but closer to 36, $\sqrt{35} \approx 5.92$, closest to 5.8 among the choices.
- 25) **Choice D is correct.** (8.PAR.3.2) Distribute: $-2n + 8 = 10$. Subtract 8: $-2n = 2$. Divide by -2 : $n = -1$.
- 26) **Choice A is correct.** (8.FGR.7.2) Substitute $y = \frac{2}{3}x - 1$ into $3y + 2x = 9$: $3(\frac{2}{3}x - 1) + 2x = 9$, so $2x - 3 + 2x = 9$, giving $4x = 12$ and $x = 3$. Then $y = \frac{2}{3}(3) - 1 = 2 - 1 = 1$. So $(3, 1)$ is the answer.



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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 4 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!

Give your child the confidence and skills they need with **4 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!

4



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
- ✓ 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!



4 PRINTED TESTS

+



2 ONLINE TESTS



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