

Georgia Milestones

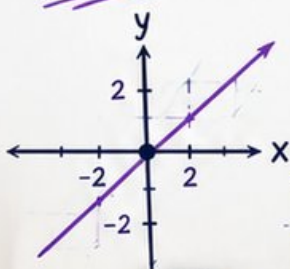
GRADE 8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

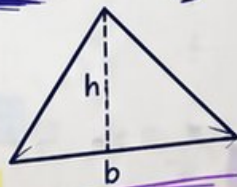
$$y = mx + b$$



**BUILD
CONFIDENCE.
SHARPEN SKILLS.
ACE YOUR
EXAM!**

Practice
Today
Succeed
Tomorrow!

$$A = \frac{1}{2}bh$$



7 PRINTED
TESTS



2 ONLINE
TESTS



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

7 Georgia Milestones Grade 8 Math Practice Tests

Grade 8 Milestones Prep with Seven Mixed-Skill Practice Rounds



Seven 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!

Seven focused rounds for sharper Milestones math thinking

This book gives you seven 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 seven-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?

Seven Milestones tests, 280 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.
Test 7	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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& answers

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1) A right triangle has legs of 3 and 4. Which statement is true?

☐ A. The hypotenuse is 7

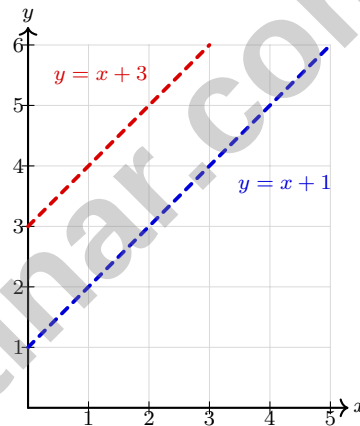
☐ C. The legs are 3 and 5

☐ B. The hypotenuse is 5

☐ D. The hypotenuse is 1

2) Solve for x : $3(x + 2) - 5 = x + 7$. Show all steps and verify your solution.

3) The two lines on the graph below are parallel. Which system do they represent?



☐ A. $y = x + 1$ and $y = x + 3$

☐ C. $y = 2x + 1$ and $y = 2x + 3$

☐ B. $y = x + 1$ and $y = -x + 3$

☐ D. $y = x + 1$ and $y = x + 1$

4) The function $y = 2 - 5x$ is linear. What are its slope and y -intercept?

☐ A. Slope = -5 , y -intercept = -2

☐ C. Slope = -5 , y -intercept = 2

☐ B. Slope = 2 , y -intercept = -5

☐ D. Slope = 5 , y -intercept = 2



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5) A triangle has angles measuring 55° , 68° , and x° . Find x .

☐ A. 57°

☐ C. 77°

☐ B. 67°

☐ D. 87°

6) A decorative shape consists of a circle (radius 5 cm) with four congruent right triangles arranged around it (each with legs 3 cm and 4 cm). What is the total area? Use $\pi \approx 3.14$.

☐ A. 66.5 cm^2

☐ C. 102.5 cm^2

☐ B. 90.5 cm^2

☐ D. 147.5 cm^2

7) A student has 45 points and earns 5 points per quiz. How many quizzes are needed to reach at least 70 points?

8) A photograph is 10 inches wide. A thumbnail is 0.5 inches wide. What is the scale factor from the photograph to the thumbnail?

☐ A. 20

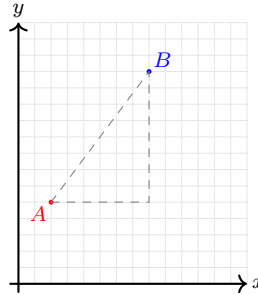
☐ C. 0.5

☐ B. 0.05

☐ D. 2



- 9) On a coordinate grid, point A is at $(2, 5)$ and point B is at $(8, 13)$. Use the distance formula to find the distance from A to B .



- ☐ A. 10
- ☐ B. 14
- ☐ C. $\sqrt{90}$
- ☐ D. 8
- 10) A sphere and a cylinder both have radius 2 cm. The cylinder has height 8 cm. Which solid has greater volume? (Use $\pi \approx 3.14$.)
- ☐ A. Sphere ($\approx 33.49 \text{ cm}^3$)
- ☐ B. Cylinder ($\approx 100.48 \text{ cm}^3$)
- ☐ C. Both have equal volume
- ☐ D. Cannot determine from given data
- 11) Pyramid A has a square base with side 4 cm and height 9 cm. Pyramid B has a square base with side 8 cm and height 18 cm (all linear dimensions doubled). How many times larger is Pyramid B's volume than Pyramid A's?
- ☐ A. 2 times
- ☐ B. 4 times
- ☐ C. 8 times
- ☐ D. 16 times
- 12) A regular pentagon has all sides equal and all angles equal. What is the measure of each interior angle?
- ☐ A. 120°
- ☐ B. 100°
- ☐ C. 72°
- ☐ D. 108°



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1) $S_1(w) = 20w$ and S_2 at $(0, 50)$, $(1, 56)$. After 4 weeks, which has more?

☐ A. S_1

☐ C. Both same.

☐ B. S_2

☐ D. Cannot be determined.

2) The slope of line ℓ_1 is $\frac{3}{4}$. If line ℓ_2 is perpendicular to ℓ_1 , what is the slope of ℓ_2 ?

☐ A. $\frac{3}{4}$

☐ C. $-\frac{4}{3}$

☐ B. $-\frac{3}{4}$

☐ D. $\frac{4}{3}$

3) What is $\sqrt{484}$?

4) Solve for x : $2(x + 3) = 3(x - 1)$

☐ A. $x = 9$

☐ C. $x = -3$

☐ B. $x = 3$

☐ D. $x = 1$

5) Which inequality is equivalent to $-\frac{x}{4} < 2$?

☐ A. $x < -8$

☐ C. $x > -8$

☐ B. $x < 8$

☐ D. $x > 8$

6) Which ordered pair satisfies both equations?

• $2x - y = 5$

• $x + 2y = 5$

☐ A. $(3, 1)$

☐ C. $(1, -3)$

☐ B. $(2, 0)$

☐ D. $(4, 3)$



7) The table shows the distance traveled over time. Is this a linear relationship?

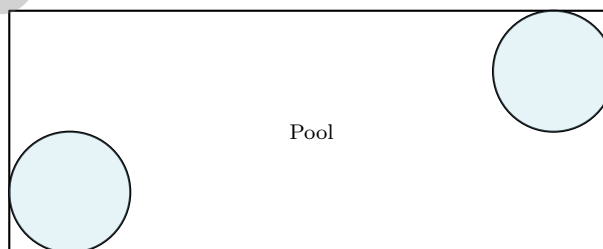
Time (h)	1	2	3	4
Distance (mi)	60	120	180	240

- ☐ A. No, time goes up to 4 ☐ C. No, the distances double
☐ B. Yes, the first differences are constant (60 mi) ☐ D. Yes, the ratio of distance to time is not constant

8) Calculate $\frac{9.6 \times 10^8}{3.2 \times 10^5}$ and express in scientific notation.

9) Parallel lines are cut by a transversal. If corresponding angles are $(5x - 10)^\circ$ and $(3x + 50)^\circ$, find x .

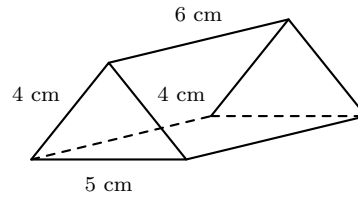
- ☐ A. 15 ☐ C. 25
☐ B. 20 ☐ D. 30
- 10) A swimming pool shape is a rectangle (20 m by 8 m) with two circular spa zones (radius 2 m each) built into two corners. What is the area of the pool excluding the spas? Use $\pi \approx 3.14$.



- ☐ A. 74.88 m² ☐ C. 134.88 m²
☐ B. 144 m² ☐ D. 159.04 m²



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1)

A triangular prism has a triangular base with sides 5 cm, 4 cm, and 4 cm. The height (length) of the prism is 6 cm. The height of the triangle is approximately 3.1 cm. What is the total surface area?

☐ A. 72.4 cm^2

☐ C. 96.8 cm^2

☐ B. 84.8 cm^2

☐ D. 93.5 cm^2

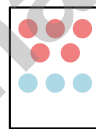
2) A trend line has equation $y = 2.5x - 5$. What would be the predicted value of y when $x = 10$?

☐ A. 30

☐ C. 20

☐ B. 25

☐ D. 15



5 red, 3 blue

3)

A bag contains 5 red and 3 blue marbles. A marble is drawn, its color noted, replaced, then another marble is drawn. What is the probability both marbles are red?

☐ A. $\frac{10}{64}$

☐ C. $\frac{10}{16}$

☐ B. $\frac{25}{64}$

☐ D. $\frac{5}{8}$



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4) A scientist arranges 8 samples in order for an experiment but only uses the first 3 positions. How many ways can the first 3 positions be filled?

☐ A. $8!$

☐ B. $8 \times 7 \times 6 = 336$

☐ C. $\binom{8}{3} = 56$

☐ D. $3! = 6$

5) If $x = \sqrt{144}$, is x rational or irrational?

☐ A. Irrational; $x = 144$

☐ B. Rational; $x = 144$

☐ C. Irrational; $x = 12$

☐ D. Rational; $x = 12$

6) Convert $0.5\bar{3}$ to a fraction in simplest form.

☐ A. $\frac{53}{100}$

☐ B. $\frac{5}{30}$

☐ C. $\frac{16}{33}$

☐ D. $\frac{48}{90} = \frac{8}{15}$

7) Which radicand gives a square root closest to 5.5?

☐ A. 25

☐ B. 28

☐ C. 33

☐ D. 30

8) Which of the following equals 3.8×10^2 ?

☐ A. 38

☐ B. 38,000

☐ C. 3,800

☐ D. 380

9) Simplify $\frac{a^4b^3}{a^2b}$.

☐ A. a^2b^{-2}

☐ B. a^2b^3

☐ C. $\frac{a^6b^4}{a^2b^2}$

☐ D. $\frac{a^2b^4}{1}$ or a^2b^2



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.8.2) The 3-4-5 Pythagorean triple is among the most common. $3^2 + 4^2 = 9 + 16 = 25$, so $c = 5$.
- 2) **The correct answer is $x = 3$.** (8.PAR.3.2) Distribute the 3: $3x + 6 - 5 = x + 7$. Simplify: $3x + 1 = x + 7$. Subtract x from both sides: $2x + 1 = 7$. Subtract 1 from both sides: $2x = 6$. Divide by 2: $x = 3$. Verify: $3(3+2) - 5 = 3(5) - 5 = 15 - 5 = 10$ and $3 + 7 = 10$ ✓.
- 3) **Choice A is correct.** (8.FGR.7.2) Parallel lines have the same slope but different y -intercepts. Both lines shown have slope 1 but intercepts 1 and 3.
- 4) **Choice C is correct.** (8.FGR.5.2) Rewrite as $y = -5x + 2$. In the form $y = mx + b$, the slope $m = -5$ and the y -intercept $b = 2$.
- 5) **Choice A is correct.** (8.GSR.8) Sum of angles in a triangle is 180° . Solve: $180 - 55 - 68 = 57^\circ$.
- 6) **Choice C is correct.** (8.GSR.8.2) Circle area $= \pi r^2 = 3.14 \times 5^2 = 78.5 \text{ cm}^2$. Each triangle area $= \frac{1}{2} \times 3 \times 4 = 6 \text{ cm}^2$. Four triangles $= 24 \text{ cm}^2$. Total $= 78.5 + 24 = 102.5 \text{ cm}^2$.
- 7) **The correct answer is 5.** (8.PAR.3.5) Solve $45 + 5q \geq 70$, giving $q \geq 5$. The minimum whole number is 5.
- 8) **Choice B is correct.** (8.GSR.8) Scale factor is $\frac{0.5}{10} = 0.05$, a reduction.
- 9) **Choice A is correct.** (8.GSR.8.3) $d = \sqrt{(8-2)^2 + (13-5)^2} = \sqrt{6^2 + 8^2} = \sqrt{36 + 64} = \sqrt{100} = 10$.
- 10) **Choice B is correct.** (8.GSR.8.4) Sphere: $V = \frac{4}{3} \times 3.14 \times 8 = 33.49 \text{ cm}^3$. Cylinder: $V = 3.14 \times 4 \times 8 = 100.48 \text{ cm}^3$. Cylinder is larger.
- 11) **Choice C is correct.** (8.GSR.8.4) $V_A = \frac{1}{3} \times 16 \times 9 = 48 \text{ cm}^3$. $V_B = \frac{1}{3} \times 64 \times 18 = 384 \text{ cm}^3$. Ratio: $\frac{384}{48} = 8$. When linear scale is $2\times$, volume scales by $2^3 = 8\times$.
- 12) **Choice D is correct.** (8.FGR.6.3) The sum for a pentagon is $(5-2) \times 180 = 540^\circ$. Each angle of a regular pentagon is $\frac{540}{5} = 108^\circ$.
- 13) **Choice A is correct.** (8.FGR.6.4) When points are scattered randomly with no visible trend or direction, there is no correlation. An upward trend, downward trend, or tight line all indicate some form of correlation.
- 14) **The correct answer is 7.** (8.PAR.3.5) Substitute (4, 1): $2(4) - 1 = 7$.
- 15) **Choice C is correct.** (8.FGR.6.2) The y -intercept (15) is the cost when $u = 0$, representing fixed storage costs.
- 16) **Choice C is correct.** (8.FGR.5.1) The definition of a function only requires that each input has exactly one output. Different inputs can produce different outputs, and some functions are constant while others are not.
- 17) **Choice B is correct.** (8.FGR.5.4) $d_1(6) = 55(6) = 330$ miles. Slope of d_2 : $180/3 = 60$ mph, so $d_2(6) = 0 + 60(6) = 360$ miles. Since $360 > 330$, d_2 is greater.
- 18) **The correct answer is B, E.** (8.FGR.5.5) The equation has slope $-\frac{2}{3}$ and y -intercept 5, so B and E are correct. The point (5, 0) is not on the line because $-\frac{2}{3}(5) + 5 = \frac{5}{3}$, not 0. A perpendicular line would have slope $\frac{3}{2}$, not $-\frac{3}{2}$.
- 19) **Choice A is correct.** (8.FGR.5.2) Cumulative rainfall never decreases. A steep jump indicates heavy rainfall over a short time; a flat section means zero rainfall. B would show a gradual, constant increase (not steep). C would be a small jump then flat. D is impossible for cumulative data.
- 20) **Choice D is correct.** (8.GSR.8) Rotation is a rigid motion that preserves lengths. If two segments are congruent before rotation, they remain congruent after rotation. Both still have their original lengths.
- 21) **Choice A is correct.** (8.GSR.8) Reverse the translation: $(x, y) \rightarrow (x + 6, y - 4)$. So $P = (1 + 6, 8 - 4) = (7, 4)$.
- 22) **Choice D is correct.** (8.GSR.8.2) A linear pair of angles is supplementary. So the other angle is $180 - 42 = 138^\circ$.
- 23) **Choice C is correct.** (8.FGR.6.4) Row-conditional frequency: among high-quality products (row total 320), premium count 240. Denominator is row total. This is 0.75 or 75%.
- 24) **Choice B is correct.** (8.FGR.6.3) MAD represents the average distance each value is from the mean, showing variability. It cannot be negative because it uses absolute values.
- 25) **Choice B is correct.** (8.GSR.8.2) Even numbers on a die: 2, 4, 6. That's 3 out of 6 outcomes, so $P(\text{even}) = \frac{3}{6} = \frac{1}{2}$.
- 26) **Choice B is correct.** (8.NR.1.1) Coin flip (2 outcomes) combined with die roll (6 outcomes): $2 \times 6 = 12$ total outcomes.



Hi, Detail Champion!

◇ In Grade 8, small details can change an entire answer: a negative sign, a decimal place, a unit, an exponent, or an inequality symbol. ◇

★ **Remember this:** You practiced noticing those details. That is a serious test skill, and it gets better with every careful review. This version gave you 7 opportunities to rehearse test-day habits. ★

Detail Checks

- **Signs:** Circle negatives before simplifying.
- **Symbols:** Read inequality signs carefully.
- **Decimals:** Line up place values.
- **Units:** Match the unit the question asks for.

Grade 8 test-day tip: Use the final minute on each section for a detail scan, not a full redo.

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

Jay Daie

Your Detail-Check Coach

PRACTICE TODAY SUCCEED TOMORROW!

Give your child the confidence and skills they need with **7 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!

GRADE 8

Practice
Today
Succeed
Tomorrow!

Algebra

Geometry

Statistics

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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