

8

Georgia

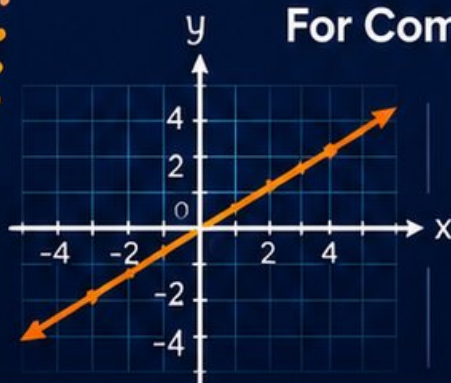
Milestones

GRADE 8

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs



$$A = \pi r^2$$

$$C = 2\pi r$$

$$V = \frac{1}{3}\pi r^2 h$$



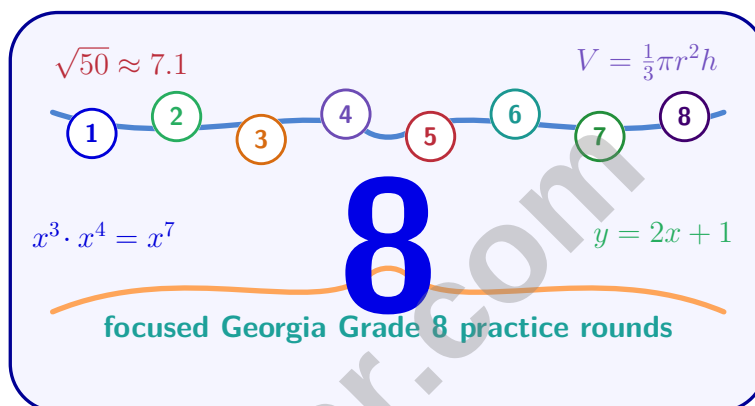
$$V = \frac{1}{3}b^2 h$$

**8** PRINTED TESTS**2** ONLINE TESTS

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

8 Georgia Milestones Grade 8 Math Practice Tests

Georgia Grade 8 Review for Functions, Geometry, and Quantitative Reasoning



Eight 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!

Eight focused rounds for sharper Milestones math thinking

This book gives you eight 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

An eight-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?

Eight Milestones tests, 320 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 7–8	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.



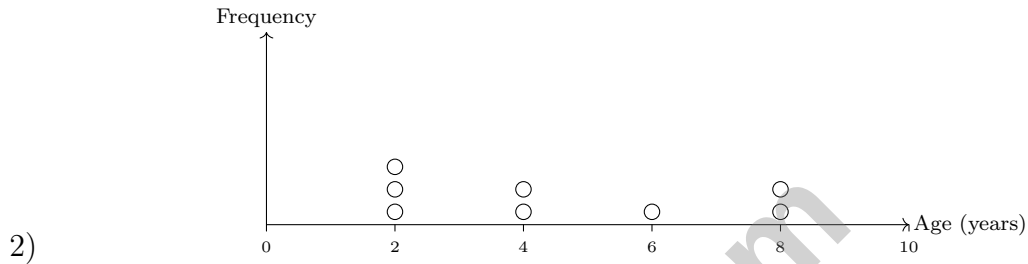
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- 1) A young professional has debt: credit card \$1,500 at 18% APR, student loan \$10,000 at 4% APR. In one year with no payments, approximately how much additional interest accumulates?

- ☐ A. \$270 ☐ C. \$670
☐ B. \$400 ☐ D. \$1,770

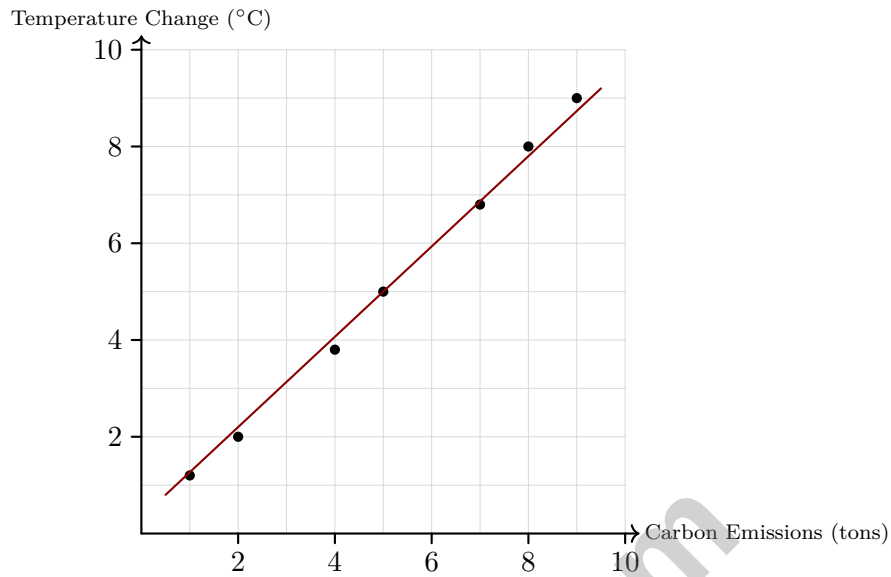


Children's ages: 2, 2, 2, 4, 4, 6, 8, 8 (mean = 5). What is the MAD?

- ☐ A. 1.75 ☐ C. 2.25
☐ B. 2 ☐ D. 3



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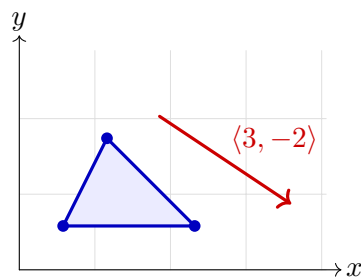


3)

A scientist studies the relationship between carbon emissions and temperature change. The trend line shows a strong positive relationship. Which is the best interpretation?

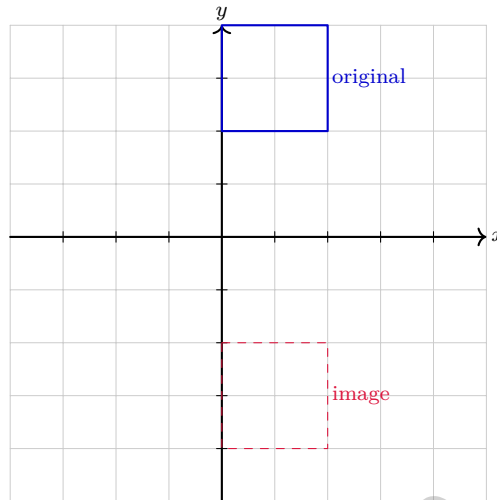
- ☐ A. As carbon emissions increase, temperature tends to increase on average
☐ B. Temperature change has no relationship to emissions
☐ C. Higher temperatures cause carbon emissions
☐ D. The relationship is random

4) A triangle has vertices at coordinates $(1, 1)$, $(4, 1)$, and $(2, 3)$. It is translated 3 units right and 2 units down. What are the coordinates of the image?



- ☐ A. $(4, 3)$, $(7, 3)$, $(5, 5)$
☐ B. $(4, -1)$, $(7, -1)$, $(5, 1)$
☐ C. $(-2, -1)$, $(1, -1)$, $(-1, 1)$
☐ D. $(2, 2)$, $(5, 2)$, $(3, 4)$

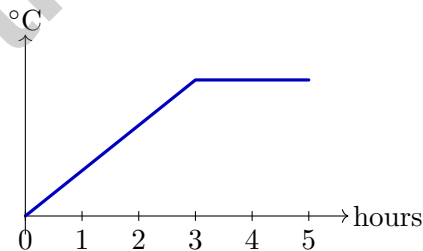




5)

Rectangle (blue) is transformed to the image (red). Which transformation is shown?

- ☐ A. Reflection across the x -axis ☐ C. Translation down 4
- ☐ B. Rotation 90° counterclockwise ☐ D. Dilation by scale factor -1
- 6) A graph shows temperature rising for 3 hours at 5 degrees per hour, then stays constant for 2 hours. If the starting temperature is 10 degrees C, what is the temperature after 5 hours?



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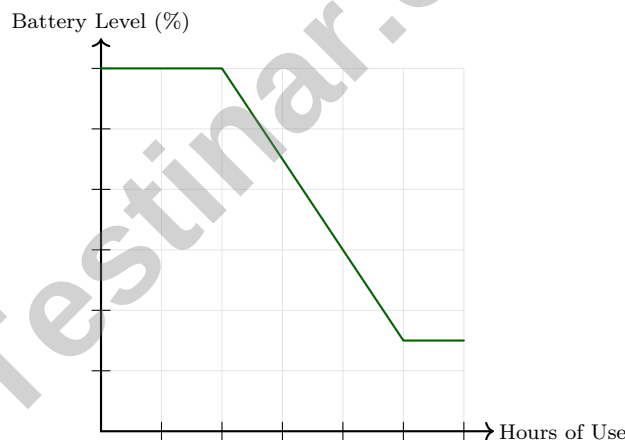
1) The radius of Jupiter is about 7.14×10^7 m. What is this in standard form?

- ☐ A. 714,000 m ☐ C. 714,000,000 m
☐ B. 7,140,000,000 m ☐ D. 71,400,000 m

2) Points $(-1, 5)$ and $(2, 14)$ lie on a line. Find the slope.

3) Which of the following graphs represents a function?

- ☐ A. A vertical line. ☐ C. A point.
☐ B. A circle. ☐ D. An ellipse centered at the origin.



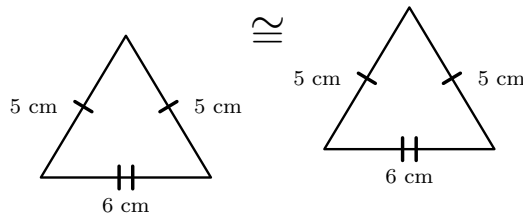
4)

A smartphone battery charges to 100%, remains fully charged during 2 hours of non-use, then drains steadily over 3 hours of active use. Which statement is true?

- ☐ A. The phone uses battery only during the first 2 hours ☐ C. The battery level is constant from 0 to 2 hours
☐ B. The battery drains faster during non-use ☐ D. The phone battery reaches 0% at 6 hours



- 5) Two congruent isosceles triangles are shown with tick marks indicating equal sides. Triangle 1 has a base of 6 cm and equal sides of 5 cm each. What is the perimeter of Triangle 2?



- ☐ A. 11 cm ☐ C. 22 cm
☐ B. 16 cm ☐ D. 30 cm
- 6)
- | Value | 4 | 8 | 12 |
|-------|---|---|----|
| Freq. | 2 | 3 | 5 |
- Frequency table: mean = 9.2. Calculate MAD.
- ☐ A. 2.0 (forgot to weight by frequency) ☐ D. 4.2 (summed deviations without dividing by n)
☐ B. 2.8
☐ C. 3.4 (used unweighted average of deviations)
- 7) A rectangle's length is 4 cm more than its width. If the perimeter is 32 cm, what is the length?

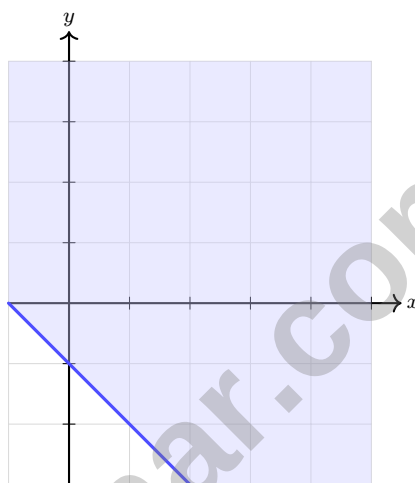


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1) If a data set has a small MAD, what does this tell us about the data?

- ☐ A. The data is clustered close to the mean
- ☐ B. The data is widely spread out
- ☐ C. The data has no mean
- ☐ D. The data must all be positive

Explain: Why does a small MAD indicate consistency?

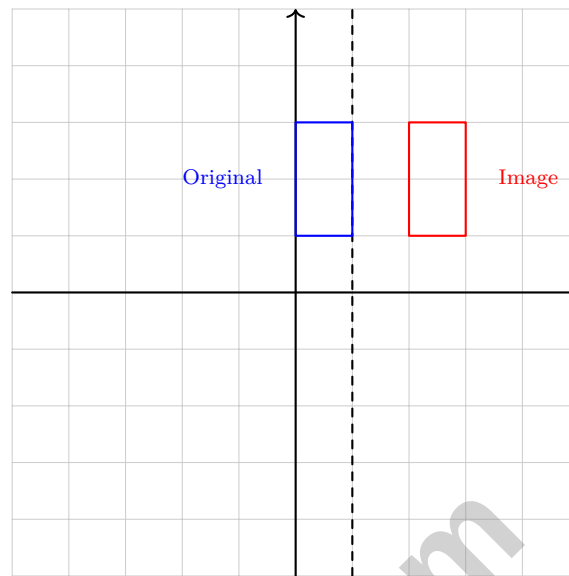


2)

The line shown has equation $y = -x - 1$. With shading above, the inequality is:

- ☐ A. $y > -x - 1$
- ☐ B. $y < -x - 1$
- ☐ C. $y \geq -x - 1$
- ☐ D. $y \leq -x - 1$





3)

The figure shows a reflection across the dashed line $x = 1$. If a point on the original was at $(0, 2)$, where is it in the image?

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

- 4) A credit card balance of \$750 charges 18% APR. If no payments are made, what is the interest charged after 1 year?



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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 C is correct.** **(8.GSR.8.4)** Credit card interest: $1500 \times 0.18 = \$270$. Student loan interest: $10000 \times 0.04 = \$400$. Total: $\$270 + \$400 = \$670$.
- 2) **Choice A is correct.** **(8.FGR.6.3)** Absolute deviations: $|2 - 5| = 3$ (three times), $|4 - 5| = 1$ (twice), $|6 - 5| = 1$, $|8 - 5| = 3$ (twice). Sum = $9 + 2 + 1 + 6 = 14$. MAD = $14/8 = 1.75$.
- 3) **Choice A is correct.** **(8.FGR.6.1)** The positive slope shows association: higher emissions correspond to higher temperatures on average.
- 4) **Choice B is correct.** **(8.GSR.8)** Add 3 to each x -coordinate and subtract 2 from each y -coordinate: $(1+3, 1-2) = (4, -1)$, $(4+3, 1-2) = (7, -1)$, $(2+3, 3-2) = (5, 1)$.
- 5) **Choice A is correct.** **(8.GSR.8)** The points $(0, 2) \rightarrow (0, -2)$ and $(2, 4) \rightarrow (2, -4)$. This is the reflection rule $(x, y) \rightarrow (x, -y)$.
- 6) **The correct answer is 25.** **(8.FGR.5.2)** After 3 hours: $10 + 3 \times 5 = 25$ degrees C. Then it stays constant for 2 hours, so the final temperature is 25 degrees C.
- 7) **Choice C is correct.** **(8.FGR.6.4)** Joint frequency: intersection cell (45) divided by grand total (120). This answers 'what fraction of all respondents are rural car-owners?' $= \frac{45}{120} \approx 0.375$.
- 8) **Choice B is correct.** **(8.GSR.8.2)** There are 4 tens and 13 hearts, but the 10 of hearts is counted in both groups. The number of favorable cards is $4 + 13 - 1 = 16$, so the probability is $\frac{16}{52}$.
- 9) **Choice C is correct.** **(8.NR.1.1)** Choose 1st (5 choices), then 2nd (4 remaining), then 3rd (3 remaining): $5 \times 4 \times 3 = 60$.
- 10) **Choice D is correct.** **(8.NR.1.1)** If you add a rational number (say r) to an irrational number (say i), the result $r + i$ must be irrational. If $r + i$ were rational, then $i = (r + i) - r$ would be the difference of two rationals, which is rational, a contradiction.
- 11) **Choice D is correct.** **(8.NR.1.1)** The multiplier is 10^n where n is the block length. For $n = 1$: $10^1 = 10$; for $n = 2$: $10^2 = 100$.
- 12) **Choice D is correct.** **(8.NR.1.2)** $\frac{7}{2} = 3.5$, 0.25 , and 3 are all rational. Only $\sqrt{5}$ is irrational.
- 13) **The correct answer is 80.** **(8.FGR.6.3)** The sum of interior angles in a quadrilateral is 360° . Fourth angle = $360 - 75 - 95 - 110 = 80^\circ$.
- 14) **Choice D is correct.** **(8.NR.2.3)** $9.9 \times 10^2 = 990$ and $1.0 \times 10^3 = 1,000$. The exponent dominates when coefficients are close.
- 15) **Choice D is correct.** **(8.NR.2.1)** Numerator: $g^8 \cdot g^{-2} = g^6$. Then $\frac{g^6}{g^3} = g^3$.
- 16) **Choice D is correct.** **(8.NR.2.2)** Solve $x^3 = 512$ by taking the cube root: $x = \sqrt[3]{512} = 8$.
- 17) **The correct answer is Plot A.** **(8.FGR.6.4)** Strength of correlation is judged by how closely points cluster around the trend line. Tight clustering (Plot A) indicates stronger correlation; wide scatter (Plot B) indicates weaker correlation.
- 18) **Choice A is correct.** **(8.FGR.5.5)** In slope-intercept form $y = mx + b$, the coefficient m is the slope. Here $m = -2$.
- 19) **The correct answer is B,D.** **(8.FGR.5.1)** Option B: each input (0, 1, 2, 3) has exactly one output (0, 1, 2, 3)—a function. Option D: each input (5, 6, 7) has exactly one output (1, 2, 3)—a function. Option A: input 1 maps to both 2 and 3—not a function. Option C: input 2 maps to both 4 and 5—not a function. Option E: input 1 maps to both 1 and 3—not a function.
- 20) **Choice A is correct.** **(8.PAR.3.2)** Distribute: $2t + 6 = t + 10$. Subtract t and 6: $t = 4$.
- 21) **The correct answer is 20.** **(8.FGR.6.2)** Set $C = 210$: $210 = 50 + 8c \Rightarrow 8c = 160 \Rightarrow c = 20$ classes.
- 22) **Choice A is correct.** **(8.PAR.3.5)** Subtract 4: $x < 3$. The open circle and left-pointing ray show all numbers less than 3.
- 23) **Choice A is correct.** **(8.PAR.3.3)** Sum of areas: $x^2 + 2x + 4x + 8 = x^2 + 6x + 8$.
- 24) **Choice A is correct.** **(8.FGR.5.7)** Initial balance \$50 (intercept). Monthly deposit \$10 (slope). Equation: $B = 10m + 50$.
- 25) **Choice D is correct.** **(8.NR.1.2)** $4^2 = 16$ and $5^2 = 25$. Since $16 < 24 < 25$, we have $4 < \sqrt{24} < 5$. More precisely, $\sqrt{24} \approx 4.90$.
- 26) **Choice D is correct.** **(8.NR.2.4)** Divide coefficients: $3.6 \div 1.2 = 3$. Subtract exponents: $10^{6-2} = 10^4$. Result: 3×10^4 .



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You Are Building Test Stamina

Hi, Stamina Builder!

◇ This wide-ranging book gave you eight serious Grade 8 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. Completing practice tests builds more than math knowledge. It builds the focus needed to think clearly for a long stretch. ◇

★ **Remember this:** That stamina matters. On real test day, calm pacing can be just as important as remembering a formula. ★

Stamina Skills

- **Breathe:** Reset before a difficult page.
- **Pace:** Do not spend too long in one place.
- **Return:** Come back to skipped questions with fresh eyes.
- **Finish Strong:** Use the last minutes to check.

Grade 8 test-day tip: Practice a simple reset: pause, breathe, reread, then choose your next step.

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

Jay Daie

Your Test-Stamina Coach

PRACTICE TODAY, SUCCEED TOMORROW!

Give your child the confidence and skills they need with **8 full-length Grade 8** Math practice tests that mirror real test formats and cover all key math standards. Perfect for building skills, strengthening problem-solving abilities, and achieving success on test day!

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Questions designed to cover essential Grade 8 math standards.



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Track improvement and build confidence with every test.



BUILD SKILLS & BOOST CONFIDENCE

Strengthen understanding and feel prepared for test day.



COVERS ALL ESSENTIAL TOPICS

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- ✓ 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!



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