

9

Mississippi

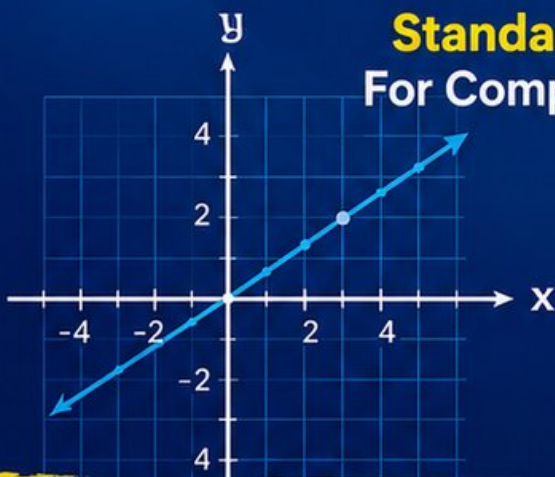
MAAP

Grade 8

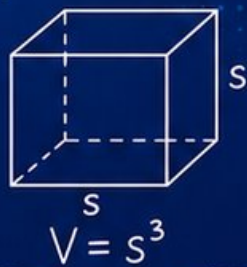
MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs



$$2x + 3y = 12$$
$$y = mx + b$$

**9** PRINTED
TESTS**2** ONLINE
TESTS

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

9 Mississippi MAAP Grade 8 Math Practice Tests

Mississippi Standards Practice for Linear Relationships, Geometry, Data, and Volume



Nine complete 40-question Grade 8 MAAP 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, Mississippi Grade 8 Problem Solver!

Nine focused rounds for sharper MAAP math thinking

This book gives you nine full Grade 8 MAAP 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 Mississippi 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 nine-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.

Mississippi 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?

Nine MAAP tests, 360 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 7–9	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) Solve for x : $-5x + 12 = -2x - 6$

☐ A. $x = -6$

☐ C. $x = -2$

☐ B. $x = 2$

☐ D. $x = 6$

2) A quadrilateral has three interior angles: 75° , 95° , and 110° . What is the measure of the fourth angle? Show your work.

3) A computer hard drive has a storage capacity of 1.5×10^{12} bytes. How many times larger is this than a USB stick with capacity 1.5×10^{10} bytes?

☐ A. 200 times

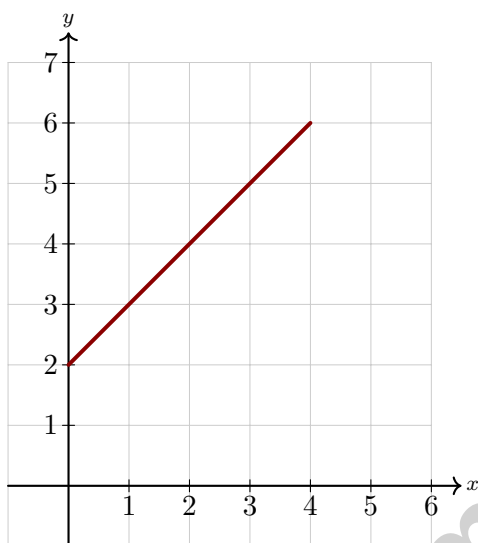
☐ C. 10,000 times

☐ B. 1,000 times

☐ D. 100 times



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4)

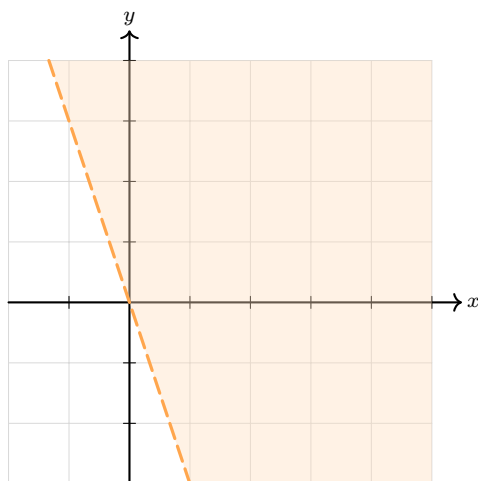
What is the y -intercept of the line shown?

☐ A. 1☐ C. 3☐ B. 4☐ D. 2

5) Using $\sqrt{2} \approx 1.41$, estimate $3 + \sqrt{2}$ to the nearest hundredth.

6) Solve: $2(3 - x) \geq 4$

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



7)

What inequality matches this graph?

☐ A. $y > -3x$

☐ C. $y \geq -3x$

☐ B. $y < -3x$

☐ D. $y \leq -3x$

8) Under which transformation would the image of a point (x, y) always lie on the opposite side of the origin from the original point?

☐ A. Reflection across the x -axis

☐ C. 180° rotation about the origin

☐ B. Reflection across the y -axis

☐ D. Translation 5 units right

9) Which is the best estimate of $\frac{\pi}{\sqrt{2}}$?

☐ A. 1.5

☐ C. 3.1

☐ B. 4.4

☐ D. 2.2



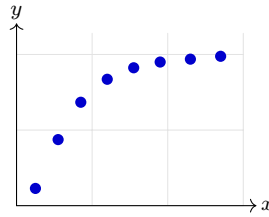
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- 1) A balloon loses 5 cm of altitude per second. It starts at 200 cm. Which equation gives altitude h after t seconds?
- ☐ A. $h = -5t + 200$ ☐ C. $h = -5t - 200$
☐ B. $h = 5t + 200$ ☐ D. $h = 200t - 5$
- 2) A regression model for test performance is $P = 5.2q + 12$, where P is percent score and q is the number of quiz attempts. A teacher observes data only for q values 1 through 5. Is predicting performance at $q = 8$ interpolation or extrapolation? Why?
- ☐ A. Interpolation; $q = 8$ is close to observed values ☐ C. Neither; the model fails beyond $q = 5$
☐ B. Extrapolation; $q = 8$ is outside the observed range $[1,5]$ ☐ D. Interpolation; the formula works for any positive number
- 3) A pyramid has a triangular base with area 18 cm^2 . If its height is doubled and the base area stays the same, the volume becomes 240 cm^3 . What was the original height?
- ☐ A. 10 cm ☐ C. 20 cm
☐ B. 15 cm ☐ D. 30 cm
- 4) A circular pool with radius 4 m has a rectangular platform (length 8 m, width 3 m) removed from its center. Find the remaining area. Use $\pi \approx 3.14$.
- ☐ A. 26.24 m^2 ☐ C. 41.44 m^2
☐ B. 40.56 m^2 ☐ D. 74.12 m^2



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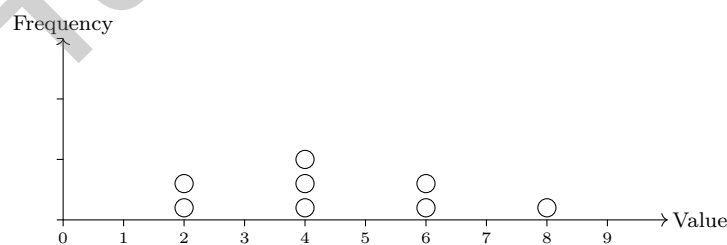
- 5) The height of a ball (in meters) t seconds after being thrown is $h(t) = 20t - 5t^2$. Find $h(2)$.



6)

A scatter plot shows years of experience (x-axis, 0–40 years) versus annual salary (y-axis, \$0–\$200k) for 100 workers. For the first 25 years, salaries increase steadily in a clear upward trend. After 25 years, salaries level off and stay relatively flat. What does this pattern indicate?

- | | |
|--|--|
| ☐ A. The relationship is purely linear across all 40 years | ☐ C. The relationship changes: linear growth early, then levels off (plateau) |
| ☐ B. A single straight line can predict all salaries equally well | ☐ D. Experience has no effect on salary after 25 years |

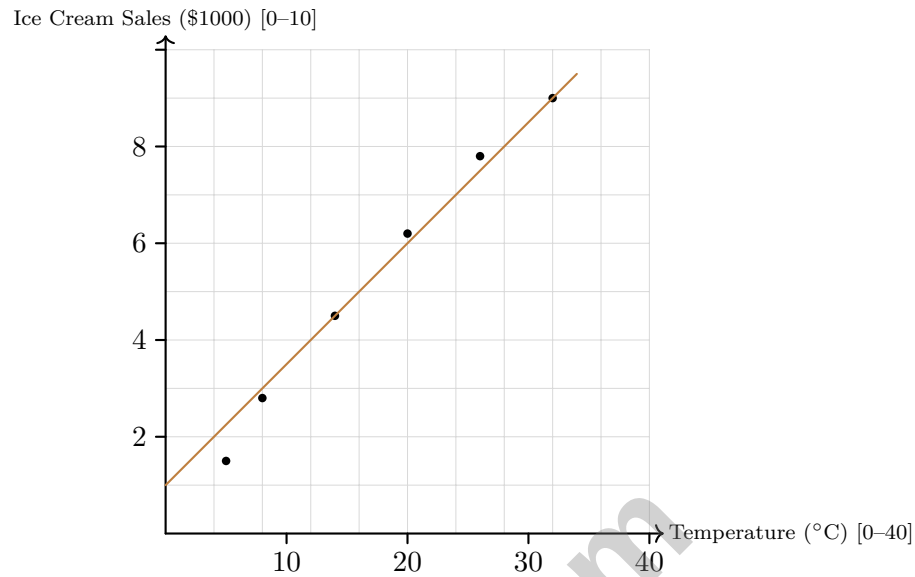


7)

Based on the dot plot, find the MAD. (Values: 2, 2, 4, 4, 4, 6, 6, 8; mean = 4.5)

- | | |
|--|---------------------------------|
| ☐ A. $\frac{13}{8} = 1.625$ | ☐ C. 2 |
| ☐ B. 1.5 | ☐ D. 2.5 |





1)

The scatter plot shows temperature versus ice cream sales. What is the approximate y -intercept (sales when temperature is 0°C)?

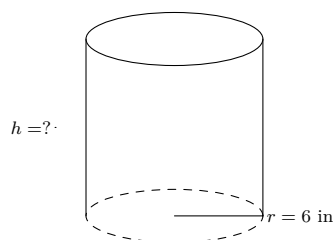
- ☐ A. \$1000 ☐ C. \$2000
☐ B. \$0 ☐ D. \$3000

2) A cubic metal box has an edge length of 6 cm. What is the surface area that needs to be painted?

- ☐ A. 36 cm^2 ☐ C. 144 cm^2
☐ B. 72 cm^2 ☐ D. 216 cm^2



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3)

A cylinder has radius 6 in and volume 1695.6 in^3 . What is its height? (Use $\pi \approx 3.14$.)

☐ A. 7.5 in

☐ C. 10 in

☐ B. 15 in

☐ D. 20 in

4) Compute $(2.5 \times 10^3) \times (4 \times 10^2)$ and write your answer in scientific notation.

5) 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

6) A music streaming service charges \$8 for premium features plus \$12 per month for access. Which equation represents the total cost T for m months of service?

☐ A. $T = 12m + 8$
☐ C. $T = 20m$
☐ B. $T = 8m + 12$
☐ D. $T = 8m - 12$


Mississippi MAAP 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 Mississippi MAAP practice test.



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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice D is correct.** (8.EE.7) Subtract $-2x$ (add $2x$) and subtract 12: $-3x = -18$. Divide by -3 : $x = 6$.
- 2) **The correct answer is 80.** (8.G.5) The sum of interior angles in a quadrilateral is 360° . Fourth angle $= 360 - 75 - 95 - 110 = 80^\circ$.
- 3) **Choice D is correct.** (8.EE.3) Divide: $\frac{1.5 \times 10^{12}}{1.5 \times 10^{10}} = 1 \times 10^2 = 100$ times larger.
- 4) **Choice D is correct.** (8.EE.6) The y -intercept is where the line crosses the y -axis, which occurs at $(0, 2)$.
- 5) **The correct answer is 4.41.** (8.NS.1) Compute $3 + 1.41 = 4.41$.
- 6) **Choice D is correct.** (8.EE.7b) Distribute: $6 - 2x \geq 4$. Subtract 6: $-2x \geq -2$. Divide by -2 (FLIP): $x \leq 1$.
- 7) **Choice A is correct.** (8.EE.8b) The DASHED line and shading ABOVE indicate a strict inequality with y greater: $y > -3x$.
- 8) **Choice C is correct.** (8.G.1) 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.
- 9) **Choice D is correct.** (8.NS.A) $\frac{\pi}{\sqrt{2}} \approx \frac{3.14}{1.41} \approx 2.23$.
- 10) **Choice C is correct.** (8.EE.1) Using the product rule, the missing exponent plus 4 must equal 9. So the missing exponent is $9 - 4 = 5$.
- 11) **Choice C is correct.** (8.EE.4) Divide: $\frac{5 \times 10^6}{2.5 \times 10^3} = \frac{5}{2.5} \times 10^{6-3} = 2 \times 10^3$.
- 12) **Choice D is correct.** (8.EE.8a) The first two systems are lines with different equations but the same form (both are $x = 2$ or $y = 4$, not two distinct lines). Option C has parallel lines (same slope, different intercepts). Option D has different slopes, so the lines intersect at exactly one point.
- 13) **Choice A is correct.** (8.F.2) Slope of u : $(3 - (-1))/(2 - 0) = 4/2 = 2 > 0$. Slope of v : $-1 < 0$. Only u is positive.
- 14) **Choice D is correct.** (8.F.3) A straight line indicates a linear function, regardless of slope or intercept. This graph clearly shows a straight line.
- 15) **Choice A is correct.** (8.G.2) Since the pentagons are congruent, pentagon PQIRST has the same properties as JKLMN: all sides are equal and all interior angles measure 108° . This makes it a regular pentagon.
- 16) **Choice A is correct.** (8.G.3) The blue rectangle has width 3; the red has width 1.5. Scale factor is $\frac{1.5}{3} = \frac{1}{2}$.
- 17) **Choice B is correct.** (8.G.6, 8.G.7) Error analysis: Verify using the converse. $16 + 25 = 41$ but $36 \neq 41$, so this is NOT a right triangle.
- 18) **Choice D is correct.** (8.EE.5) Interest needed: \$80. Solve: $80 = 800 \times 0.05 \times t \Rightarrow t = 2$ years.
- 19) **Choice C is correct.** (8.EE.2) $10 \times 10 \times 10 = 1000$, so $\sqrt[3]{1000} = 10$.
- 20) **Choice D is correct.** (8.EE.5) Constant of proportionality $k = \frac{y}{x} = \frac{2}{4} = \frac{1}{2}$. The line passes through $(0, 0)$ and $(4, 2)$.
- 21) **The correct answer is A,B.** (8.G.8) Using the Pythagorean Theorem, $9^2 + 40^2 = 81 + 1600 = 1681$, so the hypotenuse is $\sqrt{1681} = 41$ units. C is false because $9 + 40 = 49$, not 41. D is false because the squares of the legs are needed. E is false because $41 > 40$.
- 22) **Choice C is correct.** (8.EE.7) GCF is 3: $3x^2 + 6x + 3 = 3(x^2 + 2x + 1) = 3(x + 1)^2$.
- 23) **Choice C is correct.** (8.F.1) A sideways parabola (opening right or left) fails the vertical line test because some vertical lines intersect it twice. The other options all pass the vertical line test.
- 24) **Choice A is correct.** (8.F.B) Correct: $m = \frac{6-3}{3-1} = \frac{3}{2}$. The student used $\frac{\Delta x}{\Delta y} = \frac{2}{3}$ instead of $\frac{\Delta y}{\Delta x}$, so the rise and run were inverted.
- 25) **The correct answer is $\frac{1}{3}$.** (8.NS.A) Let $x = 0.\bar{3}$. Then $10x = 3.\bar{3}$, so $9x = 3$ and $x = \frac{1}{3}$.
- 26) **Choice B is correct.** (8.F.5) The change in slope (from $3/4$ to $(4.5 - 3)/(7 - 4) = 0.5$ per meter) indicates a change in the rate structure. Option B explains why: different geological layers can cost differently. A is wrong because the slope changes, C is wrong because the line continues, and D is wrong because the slope stays positive.
- 27) **Choice A is correct.** (8.G.5) Co-interior angles (same-side interior angles) are supplementary: $124 + y = 180$, so $y = 56^\circ$.
- 28) **Choice C is correct.** (8.SP.4) Joint relative frequency is the cell count divided by the grand total: $\frac{48}{360} = \frac{2}{15} \approx 0.133$.



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Hi, Persistent Problem Solver!

◇ Some Grade 8 questions ask you to hold several ideas in your mind at once. That can feel hard, and that is exactly why practice matters. ◇

★ **Remember this:** You showed persistence by continuing through the set. That habit is powerful because difficult problems often open after one more good attempt. You practiced across 9 full Grade 8 practice tests, and that repeated effort matters. ★

Persistence Tools

- **Try a Smaller Case:** Use an easier number to see the pattern.
- **Draw It:** Make the situation visible.
- **Restate It:** Say the question in your own words.
- **Check One Step:** Fix the first unclear place.

Grade 8 test-day tip: When stuck, do not restart everything. Find the first step you trust, then rebuild from there.

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

Jay Daie

Your Persistence Coach

CONFIDENCE TODAY, SUCCESS TOMORROW!

GRADE

8

Help your child excel in math with **9 full-length Grade 8 practice tests** designed to reflect real test formats and cover all key math standards.

With a wide variety of questions and real-world applications, this book builds the skills and confidence students need to achieve their best!



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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Better **Results**.