

MISSISSIPPI MAAP

GRADE 8 MATH

PRACTICE TESTS

5

PRINTED
TESTS



2

 ONLINE
TESTS

**Standards Aligned
Problem Solving For
Comprehensive Assessment Programs**



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



$$a^2 + b^2 = c^2$$



$$y = mx + b$$

5 Mississippi MAAP Grade 8 Math Practice Tests

Five MAAP Rounds for Math Fluency and Test Confidence



Five 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!

Five focused rounds for sharper MAAP math thinking

This book gives you five 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 five-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?

Five MAAP tests, 200 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Real numbers, exponents, scientific notation, equations, and careful reading.
Tests 3–5	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) Convert $0.\overline{7}$ to a fraction. Which step is incorrect?

☐ A. Let $x = 0.\overline{7}$.

☐ B. $10x = 7.\overline{7}$.

☐ C. $10x - x = 7.\overline{7} - 0.\overline{7} = 7$ is wrong; should be 0.7 .

☐ D. $9x = 7$, so $x = \frac{7}{9}$.

2) Between which two consecutive integers does $\sqrt{77}$ lie?

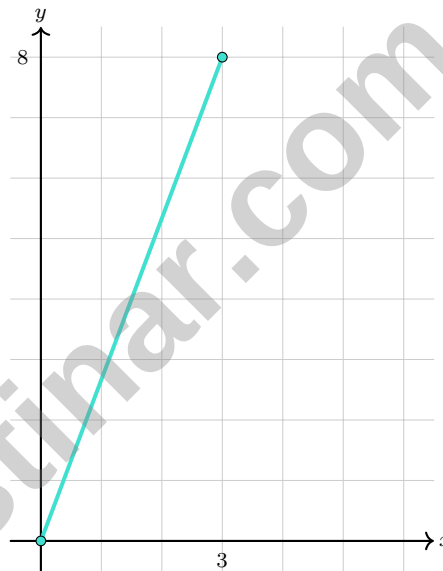
☐ A. 7 and 8

☐ B. 10 and 11

☐ C. 9 and 10

☐ D. 8 and 9

3)



What is y when $x = 6$?

☐ A. 12

☐ B. 14

☐ C. 16

☐ D. 18

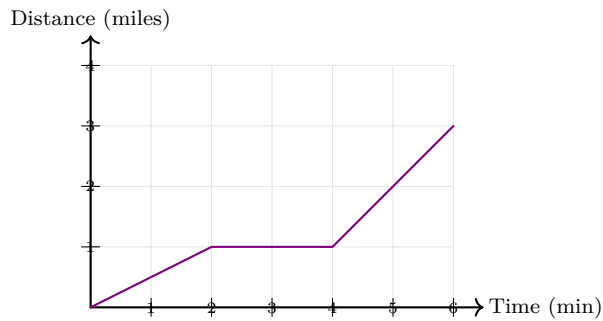


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- 4) A student expands $(x - 4)^2$ and gets $x^2 - 16$. What is the error?
- ☐ A. Missing the middle term. ☐ C. Used subtraction instead of FOIL.
- ☐ B. Forgot to square the coefficient of x . ☐ D. The answer is correct; there is no error.
- 5) A rope's length decreases at a constant rate. After 10 hours, it is 40 meters long. After 30 hours, it is 20 meters long. At what hour will the rope be 0 meters?
- ☐ A. 40 hours ☐ C. 60 hours
- ☐ B. 70 hours ☐ D. 50 hours
- 6) A slower cyclist riding 12 mph has a 9-mile head start. A faster cyclist riding 15 mph starts from the same point and rides in the same direction. How long will it take the faster cyclist to catch up?
- ☐ A. 2 hours ☐ C. 3 hours
- ☐ B. 2.5 hours ☐ D. 4 hours
- 7) If $f(x) = \frac{x+4}{2}$ and $f(x) = 5$, what is x ?
- ☐ A. 2 ☐ C. 6
- ☐ B. 4 ☐ D. 10



8)



A runner travels 1 mile in 2 minutes, stops for 2 minutes, then runs 2 more miles in 2 minutes. What is the average speed over the whole journey?

☐ A. 0.75 miles/min

☐ C. 1 mile/min

☐ B. 0.5 miles/min

☐ D. 1.5 miles/min

9) Plan X: \$10/week, start \$0. Plan Y: \$8/week, start \$50. After how many weeks equal?

10) Polygon ABCD is translated 4 units left and 3 units down to form polygon A'B'C'D'. If angle A measures 85° , what is the measure of angle A'?

☐ A. 42.5°
☐ C. 85°
☐ B. 75°
☐ D. 95°

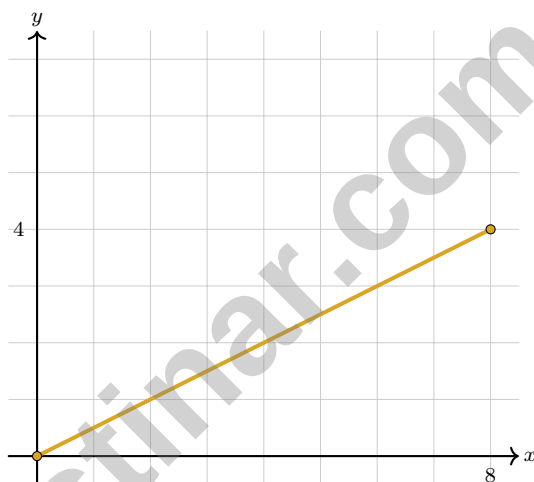

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1) A scientist measures bacterial growth. At time $t = 0$ min, there are 100 bacteria. At $t = 5$ min, there are 300 bacteria. What is the rate of change (slope)?

- ☐ A. 40 bacteria per minute ☐ C. 60 bacteria per minute
☐ B. 200 bacteria per minute ☐ D. 20 bacteria per minute

2) What is $\sqrt{400}$?

- ☐ A. 18 ☐ C. 20
☐ B. 19 ☐ D. 21



3)

The constant of proportionality is:

- ☐ A. 2 ☐ C. 0.5
☐ B. 1 ☐ D. 4



4) Multiply: $(4x - 3)(x + 2)$

☐ A. $4x^2 + 5x - 6$

☐ C. $4x^2 + 2x - 6$

☐ B. $4x^2 + 8x - 3x - 6$

☐ D. $4x^2 - 6x + 2$

5) Two hikers start from the same trailhead and walk in the same direction. One walks at 3 mph and the other at 4 mph. If they walk for the same amount of time, after how many hours will the faster hiker be 2 miles ahead?

☐ A. 0.5 hours

☐ C. 1.5 hours

☐ B. 1 hour

☐ D. 2 hours

6) The table shows $f(x)$. If $f(x) = 8$, what is x ?

x	1	2	3	4
$f(x)$	4	6	8	10

☐ A. 1

☐ C. 3

☐ B. 2

☐ D. 4

7) A fitness app models burned calories as $C = 0.08w + 50$, where C is calories and w is weight in pounds. The app predicts a 150-lb person burns 62 calories. A user actually burns 65 calories. Which is true?

☐ A. The model overestimated by 3 calories

☐ C. The residual is -3

☐ B. The model underestimated by 3 calories

☐ D. The model is perfectly accurate



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1) Solve by substitution:
$$\begin{cases} y = 2x - 5 \\ 4x - y = 7 \end{cases}$$

☐ A. $(1, -3)$

☐ C. $(3, 1)$

☐ B. $(2, -1)$

☐ D. $(4, 3)$

2) Write 4.7×10^{-4} in decimal (standard) form.

3) The area of a rectangular field is (7×10^3) m $\times$ (4×10^2) m. What is the area in square meters, in scientific notation?

☐ A. 28×10^4

☐ C. 2.8×10^6

☐ B. 11×10^5

☐ D. 2.8×10^7

4) A borrower needs to repay \$1,000. She has time but limited monthly cash flow. Comparing the plans, which choice represents the BEST overall financial decision (lowest total cost + manageable payments)?

☐ A. \$50/month for 24 months (total \$1,200; low monthly cost)

☐ C. \$125/month for 8 months (total \$1,000; high monthly cost)

☐ B. \$100/month for 12 months (total \$1,200; medium monthly cost)

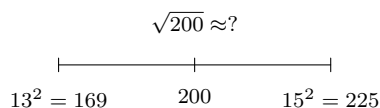
☐ D. \$83/month for 18 months (total \$1,494; expensive overall)



- 5) A scientist measures a particle with mass $m = 10^{-6}$ kilograms. Rewrite this as a fraction.

- ☐ A. $\frac{1}{6}$ kg ☐ C. 10^6 kg
☐ B. -10^6 kg ☐ D. $\frac{1}{10^6}$ kg

- 6) Which is a reasonable approximation for $\sqrt{200}$?



- ☐ A. 12 ☐ C. 16
☐ B. 18 ☐ D. 14
- 7) 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

- 8) Factor $x^2 - 2x - 15$.

- ☐ A. $(x - 5)(x + 3)$ ☐ C. $(x - 15)(x + 1)$
☐ B. $(x + 5)(x - 3)$ ☐ D. $(x - 1)(x - 15)$

- 9) Which statement best defines a function?

- ☐ A. A relation where every output has exactly one input. ☐ C. A set of ordered pairs with different x -coordinates.
☐ B. A relation where every input has exactly one output. ☐ D. Any relation that includes both positive and negative values.



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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 C is correct.** **(8.NS.A)** When we subtract $10x - x = 7.\overline{7} - 0.\overline{7}$, we get 7 (not 0.7). The repeating parts cancel perfectly, leaving the integer 7.
- 2) **Choice D is correct.** **(8.EE.2)** $8^2 = 64$ and $9^2 = 81$. Since $64 < 77 < 81$, we have $8 < \sqrt{77} < 9$.
- 3) **Choice C is correct.** **(8.EE.5)** Slope $k = \frac{8}{3}$. Equation: $y = \frac{8}{3}x$. At $x = 6$: $y = \frac{8}{3}(6) = 16$.
- 4) **Choice A is correct.** **(8.EE.7)** $(x - 4)^2 = x^2 - 8x + 16$, not $x^2 - 16$. The student missed the middle term $-8x$ that comes from $2(x)(-4)$.
- 5) **Choice D is correct.** **(8.F.B)** Slope = $\frac{20 - 40}{30 - 10} = \frac{-20}{20} = -1$ m/h. Using $(30, 20)$ with slope -1 : $0 = 20 - 1(t - 30)$, so $t = 50$.
- 6) **Choice C is correct.** **(8.EE.8c)** Let t = the time in hours after the faster cyclist starts. The faster cyclist travels 15t miles, and the slower cyclist's distance from the same starting point is $9 + 12t$. Set $15t = 9 + 12t$, so $3t = 9$ and $t = 3$.
- 7) **Choice C is correct.** **(8.F.A)** Solve $\frac{x+4}{2} = 5$: multiply both sides by 2 to get $x + 4 = 10$, so $x = 6$.
- 8) **Choice B is correct.** **(8.F.5)** Total distance = 3 miles. Total time = 6 minutes. Average speed = $3 \div 6 = 0.5$ miles/min. The flat segment adds time but no distance.
- 9) **The correct answer is 25.** **(8.F.2)** $S_X(w) = 10w$, $S_Y(w) = 50 + 8w$. Equal when $10w = 50 + 8w \Rightarrow w = 25$.
- 10) **Choice C is correct.** **(8.G.2)** Translation is a rigid motion that preserves all angles. Since polygon A'B'C'D' is congruent to ABCD, angle A' = angle A = 85° .
- 11) **Choice A is correct.** **(8.G.3)** A 180° rotation about the origin uses the rule $(x, y) \rightarrow (-x, -y)$. So $(-5, 3) \rightarrow (5, -3)$.
- 12) **The correct answer is 2.** **(8.F.3)** The change in y is 4 when x increases by 2, so the slope is $4 \div 2 = 2$.
- 13) **Choice C is correct.** **(8.G.5)** Co-interior angles are supplementary: $3w + w = 180 \Rightarrow 4w = 180 \Rightarrow w = 45^\circ$.
- 14) **Choice B is correct.** **(8.G.6, 8.G.7)** The diagonal is $d = \sqrt{70^2 + 24^2} = \sqrt{5476} = 74$ m. Walking along the length and width is $70 + 24 = 94$ m, so the diagonal is $94 - 74 = 20$ m shorter.
- 15) **Choice A is correct.** **(8.G.8)** Using the Pythagorean Theorem: $c = \sqrt{8^2 + 6^2} = \sqrt{64 + 36} = \sqrt{100} = 10$ units.
- 16) **Choice B is correct.** **(8.G.7)** Corresponding angles are congruent: $7z - 8 = 5z + 20 \Rightarrow 2z = 28 \Rightarrow z = 14^\circ$.
- 17) **Choice B is correct.** **(8.G.C)** Both have the same volume and height, so they must have the same base area. The rectangular pyramid's base area is also 60 cm^2 .
- 18) **Choice B is correct.** **(8.G.7)** Decompose: rectangle and semicircle. Rectangle area = $10 \times 4 = 40 \text{ ft}^2$. Semicircle has diameter 4 ft, so radius $r = 2$ ft. Semicircle area = $\frac{1}{2}\pi r^2 = \frac{1}{2} \times 3.14 \times 2^2 = 6.28 \text{ ft}^2$. Total = $40 + 6.28 = 46.28 \text{ ft}^2$.
- 19) **The correct answer is B, C.** **(8.F.1)** Option B (parabola $y = x^2 + 2$): passes the vertical line test; each x gives one y —a function. Option C (horizontal line $y = 4$): passes the vertical line test; constant function—a function. Option A (circle): fails VLT; vertical lines intersect twice—not a function. Option D (sideways parabola $x = (y - 1)^2$): fails VLT; each $x > 0$ has two y -values—not a function. Option E (ellipse): fails VLT; vertical lines intersect twice—not a function.
- 20) **Choice B is correct.** **(8.G.5)** The sum for a hexagon is $(6 - 2) \times 180 = 720^\circ$. Each angle is $\frac{720}{6} = 120^\circ$.
- 21) **Choice B is correct.** **(8.SP.1)** An upward trend means both variables increase together, indicating positive correlation. As temperature rises (moving right), ice cream sales rise (moving up).
- 22) **Choice B is correct.** **(8.SP.4)** This is a joint frequency (read directly from the cell). Row label **Boys**, column **Basketball**: entry is 20.
- 23) **Choice C is correct.** **(8.G.8)** Option C describes the common error of confusing range with MAD. Option B correctly uses absolute value, and options A and D do not describe the range error.
- 24) **Choice B is correct.** **(8.G.7)** Prime: 2, 3, 5, 7. Even: 2, 4, 6, 8, 10. Prime OR even: 2, 3, 4, 5, 6, 7, 8, 10 = 8 numbers. Note: 2 is both prime and even, counted once. $P = \frac{8}{10} = \frac{4}{5}$.
- 25) **Choice B is correct.** **(8.SP.2)** In $y = mx + b$, $b = 5$ is the y -intercept, representing the y -value when $x = 0$.
- 26) **Choice B is correct.** **(8.G.4)** Perimeter scales linearly with the scale factor. $15 \times \frac{1}{2} = 7.5$ inches. A scale factor less than 1 creates a reduction.



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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 5 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

Practice Today. Succeed Tomorrow!

Give your child the confidence and skills they need with **5 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 |
| ✓ Measurement & Data | ✓ And More! |

5
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