

8

Maryland

MCAP

GRADE 7

MATH

PRACTICE TESTS



Standards Aligned
Problem Solving

For Comprehensive
Assessment Programs



8 PRINTED TESTS



2 ONLINE TESTS



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



BUILD CONFIDENCE



STRENGTHEN SKILLS



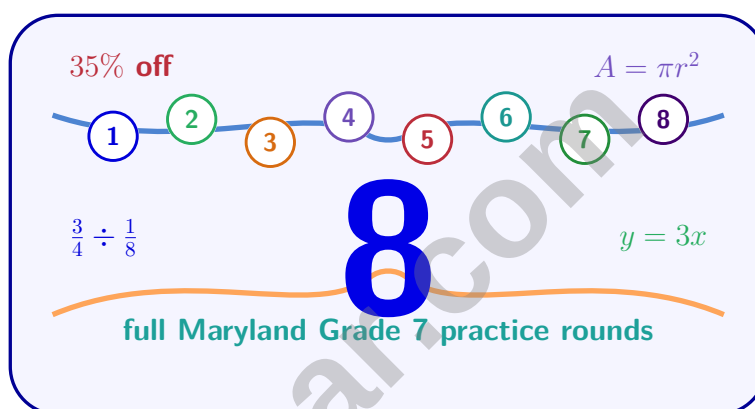
THINK SMARTER



BE TEST-READY

8 Maryland MCAP Grade 7 Math Practice Tests

State-test practice for Maryland Grade 7 proportional reasoning, finance math, equations, geometry, populations, and probability



Eight complete 40-question Grade 7 MCAP practice rounds with proportional relationships, percents, rational numbers, expressions, equations, geometry, statistics, probability, answer keys, and clear explanations for every item.

Jay Daie and Reza Nazari



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Welcome, Maryland Grade 7 Problem Solver!

Eight focused rounds for sharper MCAP math thinking

This book gives you eight full Grade 7 MCAP math practice tests. Each round is built to help you notice structure, compare quantities, use proportional reasoning, handle rational numbers, and explain your thinking with care.

Your Maryland 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 7 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 a proportion, equation, diagram, number line, 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.

Maryland 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 MCAP tests, 320 questions, and a complete review path

Part	What You Will Practice
Tests 1–3	Proportional relationships, unit rates, percents, rational-number operations, and careful reading.
Tests 4–6	Expressions, equations, inequalities, scale drawings, geometry, and multi-step problem solving.
Tests 7–8	Statistics, probability, mixed review, stamina, and choosing efficient strategies.
Answer Pages	Compact keys and explanations that show why each answer works.

The tests are mixed on purpose. Grade 7 success means recognizing which idea is being tested even when the next question changes format.

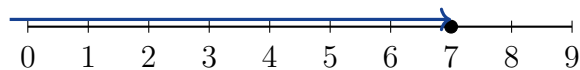


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1) Which inequality is shown by this number line?



☐ A. $n > 7$

☐ C. $n < 7$

☐ B. $n \geq 7$

☐ D. $n \leq 7$

2) Solve: $3x - 2 = 13$

☐ A. $x = 3$

☐ C. $x = 7$

☐ B. $x = 5$

☐ D. $x = 9$

3) A scale drawing has a scale of 1 cm : 0.5 m. What is the scale factor?

☐ A. 0.5

☐ C. 50

☐ B. 2

☐ D. 500

4) A teacher gives Practice Test 1 and Practice Test 2. Both have a mean of 75. Test 1 has a range of 15 points. Test 2 has a range of 40 points. What conclusion is valid?

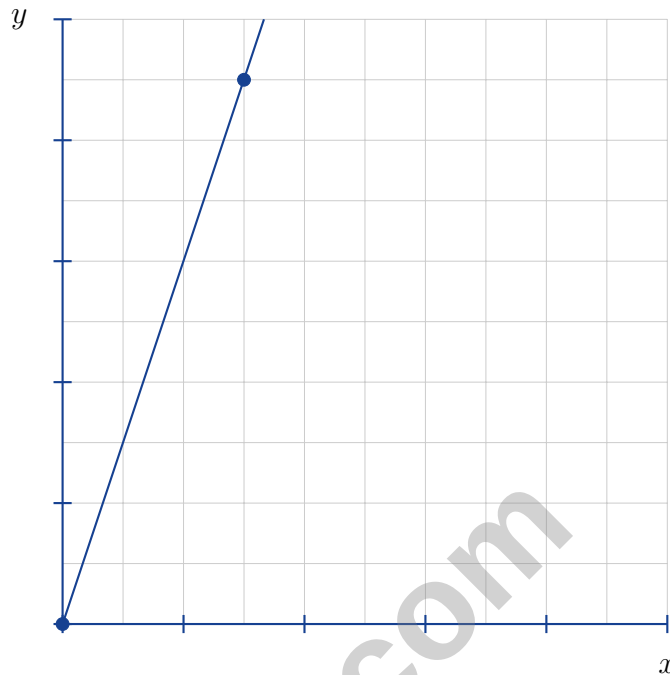
☐ A. Test 2 is harder than Test 1

☐ C. Students performed identically on both tests

☐ B. Test 1 had more consistent performance across students

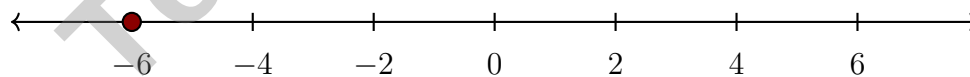
☐ D. Test 2 is easier





5)

The origin and the point (3, 9) lie on the same proportional line. What is the unit rate k ?

☐ A. 0.3☐ C. 3☐ B. 1☐ D. 96) On a number line, if $x \div 2 = -3$, what is x ?☐ A. -6☐ C. 3☐ B. -3☐ D. 6

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7) Without dividing, which fraction will **NOT** produce a terminating decimal?

☐ A. $\frac{9}{32}$
☐ B. $\frac{5}{64}$

☐ C. $\frac{7}{30}$
☐ D. $\frac{11}{80}$

8) What is $\sqrt{64}$?

☐ A. 6
☐ B. 8

☐ C. 9
☐ D. 7

9) Simplify: $(12a - 5) - (7a + 3)$

☐ A. $5a - 8$
☐ B. $5a + 8$

☐ C. $19a - 8$
☐ D. $5a - 2$

10) Which expression is equivalent to $x^2 \cdot x^7 \cdot x^3$?

☐ A. x^5
☐ B. x^{12}

☐ C. x^{13}
☐ D. x^{42}

11) A store owner ordered boxes of inventory. Each box costs \$7, and there is a \$23 shipping fee. If the total cost is \$114, which equation represents b , the number of boxes ordered?

☐ A. $7b + 23 = 114$
☐ B. $23b + 7 = 114$

☐ C. $b + 7 + 23 = 114$
☐ D. $7(b + 23) = 114$



1) Simplify: $\frac{(i^6)^2}{i^5}$

☐ A. i^7

☐ C. i^{12}

☐ B. i^{17}

☐ D. i^{60}

2) A bus company charges \$8 for an adult ticket and \$4 for a child ticket. If the total for 2 adults and 3 children is \$28, which equation is correct?

☐ A. $8(2 + 3) + 4 = 28$

☐ C. $2(8 + 4) + 3 = 28$

☐ B. $8 + 2 + 4 + 3 = 28$

☐ D. $2(8) + 3(4) = 28$

$$5x - 10$$

$$5(x - 2)$$

Both equivalent

3)

Which property explains why $5x - 10 = 5(x - 2)$?

☐ A. Associative property of multiplication

☐ C. Commutative property

☐ B. Distributive property (factoring)

☐ D. Combining like terms

4) Temperature drops 2 degrees per hour for 6 hours. What is the total change?

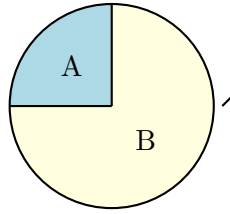
☐ A. 4 degrees

☐ C. -12 degrees

☐ B. -4 degrees

☐ D. 12 degrees





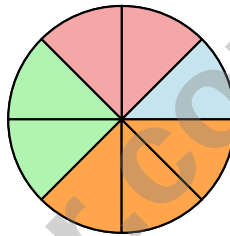
5)

A spinner with sections A and B is spun twice. What is the total number of outcomes in the sample space?

☐ A. 2

☐ C. 4

☐ B. 3

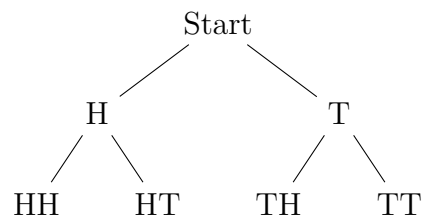
☐ D. 8


6)

A spinner has 8 equal sections: 1 blue, 2 red, 2 green, and 3 yellow. What is the probability of landing on yellow?

☐ A. $\frac{1}{8}$
☐ C. $\frac{3}{8}$
☐ B. $\frac{2}{8}$
☐ D. $\frac{1}{2}$

7) Two coins are flipped. Which tree diagram shows all possible outcomes?

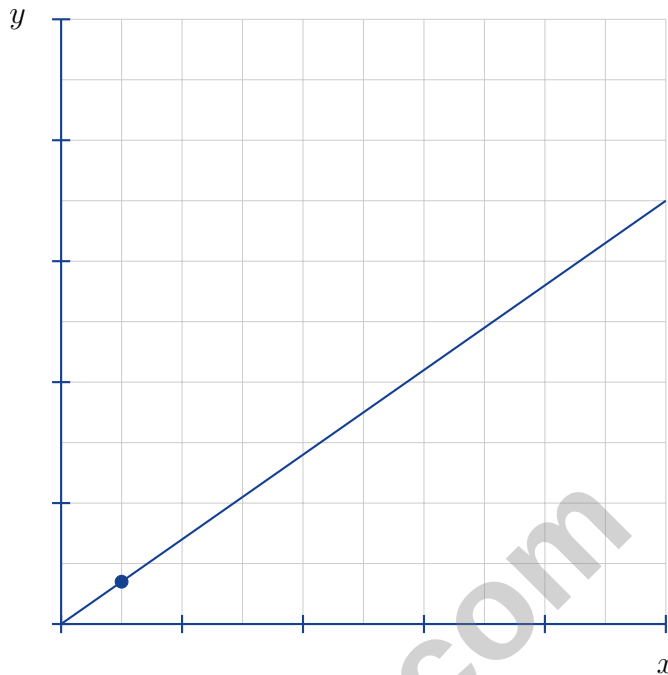

☐ A. 2 outcomes only

☐ C. 4 outcomes

☐ B. 3 outcomes

☐ D. 8 outcomes


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1)

Which equation represents this proportional relationship?

☐ A. $y = 10x$

☐ C. $y = 7x$

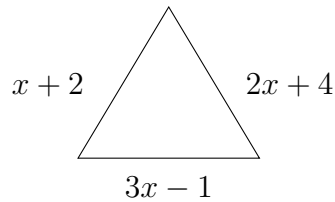
☐ B. $y = 1.4x$

☐ D. $y = 0.7x$

2) A shirt costs \$45 before an 8.5% sales tax. What is the final price paid?



- 3) A triangle has sides measuring $(x + 2)$ m, $(3x - 1)$ m, and $(2x + 4)$ m. What is the perimeter?



- ☐ A. $6x + 5$ ☐ C. $5x + 5$
☐ B. $6x - 5$ ☐ D. $6x + 3$
- 4) A jar holds 20 identical slips of paper. How many slips must be labeled “YES” if the probability of drawing “YES” is 0.4?
- ☐ A. 4 ☐ C. 6
☐ B. 8 ☐ D. 10
- 5) Which statement describes an event with probability 1?
- ☐ A. Drawing a red card from a shuffled deck ☐ C. Flipping a coin and getting heads
☐ B. Picking a number from 1 to 10 that is less than 11 ☐ D. Rolling a number greater than 6 on a standard die
- 6) Expand: $-4(3b + 2)$
- ☐ A. $-12b - 8$ ☐ C. $12b - 8$
☐ B. $-12b + 8$ ☐ D. $-12b + 2$



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Maryland MCAP Grade 7 Practice Test Answer Keys

How to use this section with a Grade 7 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 Maryland MCAP practice test.

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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice D is correct.** (7.EE.4b) A closed circle at 7 with a left arrow indicates all values less than or equal to 7, which is $n \leq 7$.
- 2) **Choice B is correct.** (7.EE.3-7.EE.4) Add 2: $3x = 15$. Divide by 3: $x = 5$.
- 3) **Choice C is correct.** (7.G.1-7.G.5) Scale factor: $0.5 \text{ m} \div 1 \text{ cm} = 50 \text{ cm} \div 1 \text{ cm} = 50$.
- 4) **Choice B is correct.** (7.SP.1-7.SP.4) Test 1's smaller range (15 vs. 40) indicates students' scores were closer together, showing more consistent performance despite identical means.
- 5) **Choice C is correct.** (7.RP.1-7.RP.3) Since the relationship is proportional, $k = \frac{y}{x} = \frac{9}{3} = 3$.
- 6) **Choice A is correct.** (7.NS.1-7.NS.3) Division as inverse: $x \div 2 = -3$ means $x = -3 \times 2 = -6$. The dot on the number line confirms this.
- 7) **Choice C is correct.** (7.NS.2d) Only C has a denominator factor other than 2 and 5: $30 = 2 \times 3 \times 5$ (contains 3). The others: $32 = 2^5$, $64 = 2^6$, $80 = 2^4 \times 5$ (only 2's and 5's).
- 8) **Choice B is correct.** (7.NS.1-7.NS.3) $8 \times 8 = 64$, therefore $\sqrt{64} = 8$.
- 9) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute the negative: $12a - 5 - 7a - 3 = (12a - 7a) + (-5 - 3) = 5a - 8$.
- 10) **Choice B is correct.** (7.EE.1-7.EE.2) Add all exponents: $x^2 \cdot x^7 \cdot x^3 = x^{2+7+3} = x^{12}$.
- 11) **Choice A is correct.** (7.EE.4a) Cost per box ($\$7b$) plus fixed shipping ($\23) equals total ($\$114$). Equation: $7b + 23 = 114$, so $b = 13$.
- 12) **Choice A is correct.** (7.EE.4a) The correct distribution is $3(2x) + 3(-1) = 6x - 3$, not $6x - 1$. The error occurred in the first step.
- 13) **The correct answer is \$1320.** (7.RP.3) Housing: $0.40 \times 2200 = \$880$. Food: $0.20 \times 2200 = \$440$. Combined: $\$880 + \$440 = \$1320$.
- 14) **Choice C is correct.** (7.EE.3-7.EE.4) Multiply: $3 \times \frac{2}{3} = \frac{6}{3} = 2$ cups. Check: $\frac{2}{3}$ is roughly 0.67; $3 \times 0.67 \approx 2$ ✓. Reasonable: tripling means flour increases 3 times.
- 15) **Choice B is correct.** (7.SP.5-7.SP.8) Total marbles: $3 + 5 + 2 = 10$. Red: 3 out of 10 gives $\frac{3}{10}$. (Blue would be $\frac{5}{10}$, green $\frac{2}{10}$, not red $\frac{7}{10}$).
- 16) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute -3: $-3x - 6 - 2x$. Combine x terms: $-3x - 2x - 6 = -5x - 6$.
- 17) **The correct answer is 0.08.** (7.RP.3) $900(1+r)^2 = 1059.48 \Rightarrow (1+r)^2 = 1.1772 \Rightarrow 1+r = 1.08 \Rightarrow r = 0.08$.
- 18) **Choice C is correct.** (7.NS.2) $-\frac{2}{5} \times (-10) = \frac{2 \times 10}{5} = \frac{20}{5} = 4$. Negative times negative is positive.
- 19) **The correct answer is -3.** (7.NS.1-7.NS.3) The opposite of -3 is 3, and the opposite of 3 is -3.
- 20) **Choice A is correct.** (7.SP.3) Company P's median (50) and Q3 (65) are both higher than Company Q's (48 and 60). These measures indicate Company P's typical and upper-quartile salaries are higher.
- 21) **Choice D is correct.** (7.RP.3) Facility fee = $0.07 \times 85 = \$5.95$. Total = $85 + 5.95 = \$90.95$.
- 22) **The correct answer is A, C.** (7.NS.1-7.NS.3) $-5 + 7 = 2$. Choice A: $7 - 5 = 2$ (correct). Choice B: $-5 - 7 = -12$ (wrong). Choice C: $7 + (-5) = 2$ (correct). Choice D: 2 (this is the result, but not an equivalent expression). Choice
- 23) **Choice C is correct.** (7.RP.1-7.RP.3) Original area: $10 \times 5 = 50 \text{ m}^2$. New dimensions: $20 \times 10 = 200 \text{ m}^2$.
- 24) **Choice B is correct.** (7.G.4-7.G.6) Each trapezoid: $\frac{1}{2}(4+6) \times 3 = 15 \text{ m}^2$. Two trapezoids: $15 \times 2 = 30 \text{ m}^2$.
- 25) **Choice B is correct.** (7.G.4-7.G.6) Volume = $l \times w \times h = 5 \times 4 \times 8 = 160 \text{ m}^3$.
- 26) **Choice B is correct.** (7.G.1-7.G.5) When two sides and the angle between them are given, exactly one triangle can be constructed (up to congruence).
- 27) **Choice C is correct.** (7.G.4-7.G.6) The longest chord is the diameter, which equals $2r = 2 \times 10 = 20 \text{ cm}$.
- 28) **Choice B is correct.** (7.G.1-7.G.5) The third angle is $180^\circ - 30^\circ - 50^\circ = 100^\circ$. With two known angles and one known side, we have ASA (Angle-Side-Angle) or AAS (Angle-Angle-Side), both of which determine a unique triangle.
- 29) **Choice B is correct.** (7.SP.1-7.SP.4) First sample (downtown only): $\frac{20}{100} = 0.20$ or 20%, but biased to one area. The larger random sample showing 15% is more representative of the entire city population.



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Hi, Grade 7 Math Star!

◇ You finished this practice set with real effort. Grade 7 math asks you to connect ideas, explain your thinking, and stay steady through multi-step problems. ◇

★ **Remember this:** Every page you completed helped build stronger habits: reading carefully, choosing a method, showing work, and checking whether the answer makes sense. You practiced across 8 full Grade 7 practice tests, and that repeated effort matters. ★

What You Built

- **Focus:** You stayed with challenging questions.
- **Accuracy:** You learned to slow down when details matter.
- **Reasoning:** You practiced explaining why a method works.
- **Readiness:** You are more prepared than when you started.

Grade 7 test-day tip: Before test day, review the questions that made you pause. Those are the best teachers.

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

Jay Daie

Your Grade 7 Math Friend

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **8** full-length Math practice tests and **2** online tests to help Grade 7 students build confidence, strengthen skills, and excel on standardized assessments.

Each practice test is carefully crafted to reflect the latest standards and includes a variety of question types, realistic test conditions, and detailed answer explanations.

Perfect for classroom use, homework, test preparation, and extra practice at home.



THIS BOOK INCLUDES:

8 Full-Length Printed Tests

2 Online Practice Tests

 Detailed Answer Explanations



MORE PRACTICE. GREATER RESULTS.

Give your child the tools to build strong math skills, confidence, and a positive attitude toward learning.

WHAT YOU'LL GAIN



Stronger Math Skills

Build a solid foundation through targeted practice and review.



Better Problem Solving

Develop logical thinking and effective solution strategies.



Deeper Understanding

Reinforce key concepts with clear explanations and meaningful practice.



Test Confidence

Familiarize with test formats and improve accuracy and speed.



Achieve Success

Build confidence and perform your best on test day.

TOPICS COVERED

- ✓ Ratios & Proportions
- ✓ The Number System
- ✓ Expressions & Equations
- ✓ Geometry
- ✓ Percents & Decimals
- ✓ Statistics & Probability
- ✓ Data Analysis
- ✓ Measurement & Conversions
- ✓ Algebraic Thinking
- ✓ And More!



2 ONLINE TESTS

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



2 EXTRA ONLINE TEST ACCESS CODE IS INSIDE THE BOOK!

Don't lose it—your extra practice and success start here!



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