

9 Maryland MCAP

GRADE 7

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

Program



9 PRINTED
TESTS



2 ONLINE
TESTS



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



BUILT FOR ACAP
Standards-Aligned



**STRENGTHEN
SKILLS**



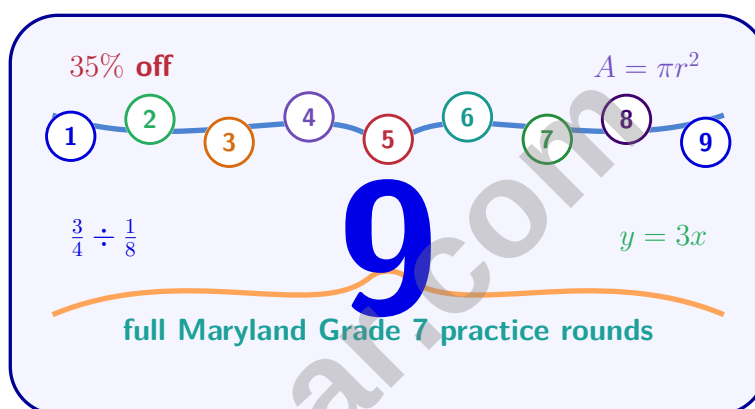
**SHARPEN
THINKING**



BE TEST-READY
Improve Performance

9 Maryland MCAP Grade 7 Math Practice Tests

Standards-Aligned Maryland Practice for Proportional Reasoning, Expressions, Geometry, Statistics, and Probability



Nine 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!

Nine focused rounds for sharper MCAP math thinking

This book gives you nine 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

A nine-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?

Nine MCAP tests, 360 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 7–9	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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For more practice
& answers

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1) A dress is on sale for \$36 after a 40% markdown. What was the original selling price?

☐ A. \$56.40

☐ C. \$50

☐ B. \$86.40

☐ D. \$60

2) A bag contains red and blue marbles. A simulation draws a marble, records the color (red), and replaces it. This is repeated 400 times, and red is drawn 284 times. Based on this simulation, what is the estimated probability of drawing a red marble? (Express as a decimal.)

Restaurant Bill

Subtotal: \$50 **Total: ?**

Tip (18%): ?

3)

What is the tip amount if the customer leaves an 18% tip on a \$50 bill?

☐ A. \$7.00

☐ C. \$9.00

☐ B. \$8.50

☐ D. \$10.00

4) The stem-and-leaf plot shows:

Stem	Leaves
10	1, 5, 7
11	2, 3, 8, 9
12	0, 4, 6

What is the mode?

☐ A. 112

☐ C. 119

☐ B. 118

☐ D. No mode



- 5) A rectangular prism has dimensions 2 feet, 3 feet, and 4 feet. A second rectangular prism has dimensions 4 feet, 6 feet, and 8 feet. How many times larger is the volume of the second prism than the first?

☐ A. 2 times ☐ C. 8 times
☐ B. 4 times ☐ D. 16 times

- 6) A circle has a diameter of $\frac{30}{7}$ meters. What is its radius?

☐ A. $\frac{15}{7}$ meters ☐ C. $\frac{60}{7}$ meters
☐ B. $\frac{30}{7}$ meters ☐ D. 7 meters

- 7) A scale model of a statue uses the ratio 1 : 50. If the model is 3 feet tall, what is the height of the actual statue?

☐ A. 50 feet ☐ C. 150 feet
☐ B. 100 feet ☐ D. 200 feet

- 8) Which expression represents “the sum of a number d and 3, all divided by 2”?

☐ A. $\frac{d}{2} + 3$ ☐ C. $d + \frac{3}{2}$
☐ B. $\frac{d+3}{2}$ ☐ D. $2(d + 3)$

- 9) A student incorrectly says a graph shows a proportional relationship. The student made an error. What was it?

The graph shows a line from (0, 2) to (4, 10).

☐ A. The line is too steep ☐ D. The line does not pass through the origin
☐ B. The points are not whole numbers
☐ C. The line has negative slope



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- 1) A rectangular prism has length 11 cm, width 5 cm, and height 3 cm. What is its surface area?

☐ A. 166 cm^2

☐ B. 206 cm^2

☐ C. 222 cm^2

☐ D. 330 cm^2

- 2) A consultant charges clients a base rate of \$100 per hour plus a 10% project management fee on the total billable hours. For a 10-hour project, what is the total cost?

- 3) If pencils cost \$0.75 each with no bulk discount, is cost proportional to quantity?

☐ A. Cannot determine without a starting point

☐ B. No, because there is a base cost of one pencil

☐ C. Yes, but only if quantity is even

☐ D. Yes, $k = 0.75$

- 4) Two proportional relationships are $y = 3x$ and $y = 5x$. Which relationship has the greater constant of proportionality?

☐ A. $y = 3x$

☐ B. $y = 5x$

☐ C. Both have the same constant

☐ D. Neither relationship is proportional



- 5) A recipe uses $\frac{1}{4}$ cup sugar and $\frac{2}{3}$ cup flour. What is the ratio of sugar to flour? Simplify.

☐ A. 8 to 3

☐ C. 2 to 3

☐ B. $\frac{1}{4}$ to $\frac{2}{3}$

☐ D. 3 to 8

- 6) A babysitter charges hourly. The table shows total earnings for different hours worked.

Hours	Earnings (\$)
2	18
4	36
7	63

What is the hourly rate (constant of proportionality)?

☐ A. \$12 per hour

☐ C. \$8 per hour

☐ B. \$10 per hour

☐ D. \$9 per hour

- 7) Which expression is equivalent to $3(2y + 7)$?

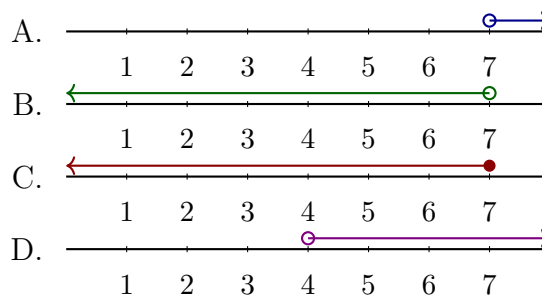
☐ A. $6y + 21$

☐ C. $3y + 10$

☐ B. $6y + 7$

☐ D. $2y + 21$

- 8) Solve the inequality $x - 3 < 4$ and identify which number line is correct.



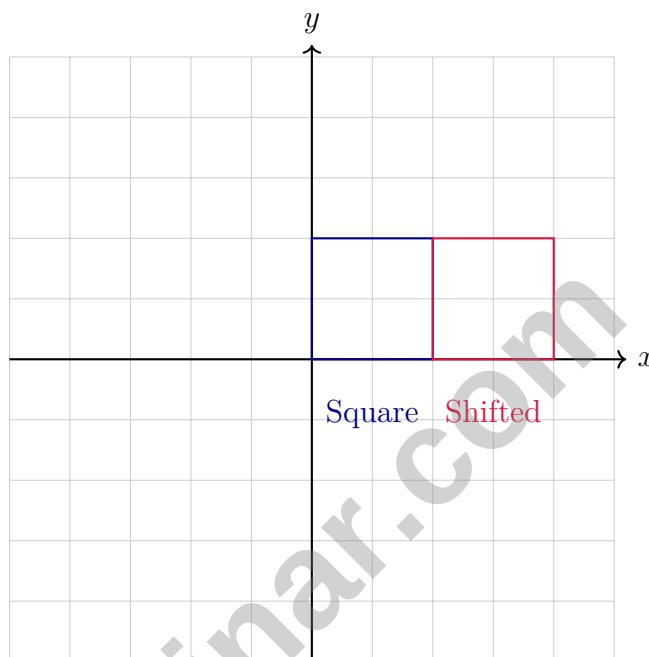
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- 1) To simulate the probability of guessing a true/false question correctly 3 times in a row, which tool best models this compound event?
- ☐ A. Rolling a six-sided die once
- ☐ B. Flipping a coin 3 times
- ☐ C. Spinning a spinner with 3 equal sections once
- ☐ D. Drawing a card from a deck of 52 once
- 2) Simplify: $\frac{a^7}{a^3}$
- ☐ A. a^{10}
- ☐ B. a^4
- ☐ C. $\frac{a^3}{a^7}$
- ☐ D. a^{21}
- 3) An online game costs \$3 per month plus a \$5 initial fee. If Sarah spent \$20 total, how many months did she play?
- ☐ A. 3 months
- ☐ B. 5 months
- ☐ C. 7 months
- ☐ D. 9 months
- 4) A floor plan is drawn with a scale of 1 cm : 1.5 m. A room in the plan is 4 cm long. How long is the actual room in centimeters?
- ☐ A. 60 cm
- ☐ B. 150 cm
- ☐ C. 200 cm
- ☐ D. 600 cm
- 5) A cube is sliced diagonally such that the cutting plane passes through two opposite edges (not just vertices). What is the maximum number of sides the cross-section can have?
- ☐ A. 3
- ☐ B. 4
- ☐ C. 5
- ☐ D. 6



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6) If angle x and angle y are complementary, and $x = 37^\circ$, what is y ?

☐ A. 53°
☐ C. 37°
☐ B. 43°
☐ D. 143°


7)

If the original square is translated to the shifted position, what is the translation vector?

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

8) If two similar rectangles have areas of 12 square cm and 48 square cm, what is the scale factor from the smaller to the larger rectangle?

☐ A. 2

☐ C. 2.45

☐ B. 4

☐ D. $\sqrt{12}$


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.RP.3) Sale price = original $\times 0.60$. So $36 = \text{original} \times 0.60$, giving original = $36 \div 0.60 = \$60$.
- 2) **The correct answer is 0.71.** (7.SP.5-7.SP.8) Relative frequency: $\frac{284}{400} = 0.71$.
- 3) **Choice C is correct.** (7.RP.3) Tip = $0.18 \times 50 = \$9.00$. The question asks for the tip amount, not the total bill.
- 4) **Choice D is correct.** (7.SP.1-7.SP.4) Each value appears exactly once, so there is no repeating value. There is no mode.
- 5) **Choice C is correct.** (7.G.4-7.G.6) Volume of first prism = $2 \times 3 \times 4 = 24 \text{ ft}^3$. Volume of second = $4 \times 6 \times 8 = 192 \text{ ft}^3$. Ratio = $\frac{192}{24} = 8$.
- 6) **Choice A is correct.** (7.G.4-7.G.6) $r = \frac{d}{2} = \frac{30}{7} \div 2 = \frac{30}{14} = \frac{15}{7}$ meters.
- 7) **Choice C is correct.** (7.RP.1-7.RP.3) Multiply model height by scale factor: $3 \times 50 = 150$ feet.
- 8) **Choice B is correct.** (7.EE.1-7.EE.2) Sum of d and 3 is $(d + 3)$. Divided by 2 is $\frac{d+3}{2}$.
- 9) **Choice D is correct.** (7.RP.1-7.RP.3) Proportional relationships must pass through $(0, 0)$. This line starts at $(0, 2)$, so it is not proportional.
- 10) **Choice D is correct.** (7.RP.1-7.RP.3) The price per notebook is $\frac{24}{8} = 3$ dollars. For 5 notebooks: $5 \times 3 = 15$ dollars.
- 11) **Choice A is correct.** (7.RP.3) $25\% \times \$800 = 0.25 \times 800 = \200 . The statement is correct.
- 12) **Choice A is correct.** (7.NS.1-7.NS.3) Net change = Final temp – Initial temp = $-2 - (-4) = -2 + 4 = 2^\circ\text{C}$.
- 13) **Choice A is correct.** (7.NS.1-7.NS.3) $7 \times 10^{-7} = 0.0000007$. Move decimal 7 places left.
- 14) **Choice A is correct.** (7.EE.1-7.EE.2) Apply power rule: $(u^4)^2 = u^8$. Then quotient rule: $\frac{u^8}{u^3} = u^{8-3} = u^5$.
- 15) **Choice B is correct.** (7.G.1-7.G.5) Scale factor $\frac{2}{5}$ means smaller = larger $\times \frac{2}{5} = 100 \times \frac{2}{5} = 40$ cm.
- 16) **Choice D is correct.** (7.RP.1-7.RP.3) W: $\frac{0.60}{3/8} = 0.60 \times \frac{8}{3} = 1.60$ \$/lb. X: $\frac{1.00}{1/2} = 2$ \$/lb. Y: $\frac{0.80}{2/5} = 0.80 \times \frac{5}{2} = 2$ \$/lb. Z: $\frac{1.25}{5/6} = 1.25 \times \frac{6}{5} = 1.50$ \$/lb. W is least.
- 17) **Choice C is correct.** (7.RP.3) Using the proportion $\frac{28}{100} = \frac{x}{400}$, cross-multiply: $x = 112$ people prefer pizza.
- 18) **Choice B is correct.** (7.NS.1-7.NS.3) $8^2 = 64$ and $9^2 = 81$. Since 75 is closer to 81 than to 64, $\sqrt{75} \approx 8.66$, which rounds to 9.
- 19) **Choice B is correct.** (7.NS.1-7.NS.3) Change = $-0.25 \times 4 = -1$ second. New time = $3.5 - 1 = 2.75$ seconds.
- 20) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute the negative: $6m - 2 - 4m + 8 = (6m - 4m) + (-2 + 8) = 2m + 6$.
- 21) **Choice C is correct.** (7.EE.4a) Although both forms are mathematically equivalent, in word-problem context, writing the fixed fee first ($3.50 + 6n$) is often clearer.
- 22) **The correct answer is A,C.** (7.G.4-7.G.6) Option A is correct (60 m^2). Option C is correct (18 m^2). The true total is $60 + 18 = 78 \text{ m}^2$, so D and
- 23) **Choice A is correct.** (7.G.1-7.G.5) Doubling the real scale (2.5 ft to 5 ft) halves the drawing: $3.2 \div 2 = 1.6$ in.
- 24) **Choice B is correct.** (7.SP.5-7.SP.8) Red sector is $360^\circ - 144^\circ = 216^\circ$. $P(\text{Red}) = \frac{216}{360} = \frac{3}{5} = 0.6$.
- 25) **The correct answer is 20.** (7.RP.1-7.RP.3) Cross multiply: $7 \times 100 = 35 \times x$. So $700 = 35x$, giving $x = 20$.
- 26) **Choice C is correct.** (7.NS.2) $-\frac{1}{4} \times 8 = -\frac{8}{4} = -2$.
- 27) **Choice A is correct.** (7.EE.1-7.EE.2) $\text{gcd}(10, 15) = 5$, so $10y + 15 = 5(2y + 3)$.
- 28) **Choice D is correct.** (7.RP.3) Interest: $0.0125 \times 800 = \$10$ per year.
- 29) **Choice D is correct.** (7.RP.3) Friend A: $400(1.10)^2 = 484$; interest = 84. Friend B: $400 + 400(0.10)(2) = 480$; interest = 80. Difference: $84 - 80 = 4$.
- 30) **The correct answer is 2800.** (7.SP.1-7.SP.4) $\frac{56}{160} = \frac{x}{8000}$. Reduce: $\frac{7}{20} = \frac{x}{8000} \Rightarrow x = 2800$.
- 31) **Choice D is correct.** (7.RP.1-7.RP.3) $k = 96/8 = \$12$ per month.
- 32) **Choice C is correct.** (7.RP.3) Increase = $12\% \times \$200 = 0.12 \times \$200 = \$24$. New fee = $\$200 + \$24 = \$224$.



Hi, Confident Learner!

◇ This high-stamina book gave you nine substantial Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. Grade 7 math can feel big because it brings together rational numbers, expressions, equations, geometry, probability, and data. ◇

★ **Remember this:** But big topics become manageable when you practice one skill at a time. That is what you have been doing with every test in this book. ★

Confidence Builders

- **Know the Goal:** Identify what the question asks.
- **Use Vocabulary:** Math words point to math actions.
- **Show Work:** Give yourself something to check.
- **Celebrate Effort:** Practice is proof that you are moving.

Grade 7 test-day tip: When reviewing, do not only mark wrong answers. Write one sentence about what you learned from each one.

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

Jay Daie

Your Confidence Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **9** 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:

9 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.

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- ✓ 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.



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