

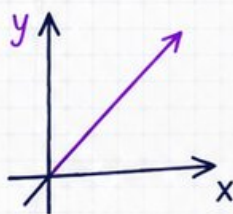
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Maryland MCAP

GRADE
7
MATH

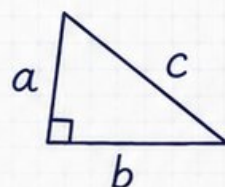
PRACTICE TESTS

- ✓ Standards Aligned
Problem Solving
For Comprehensive
Assessment Programs



$$y = mx + b$$

$$\frac{2}{3}x - \frac{4}{5} = \frac{1}{2}$$



$$3(x - 2) = 2x + 5$$



3 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
Math Skills



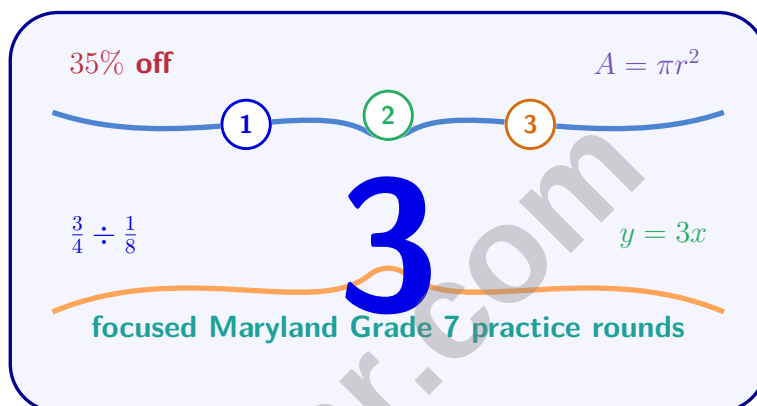
Detailed Answers
& Explanations



Improve Test
Performance

3 Maryland MCAP Grade 7 Math Practice Tests

Three-Round MCAP Review with Keys and Skill Building



Three 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!

Three focused rounds for sharper MCAP math thinking

This book gives you three 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 three-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?

Three MCAP tests, 120 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Proportional relationships, unit rates, percents, rational-number operations, and careful reading.
Test 3	Expressions, equations, inequalities, scale drawings, geometry, data, probability, and multi-step problem solving.
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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& answers

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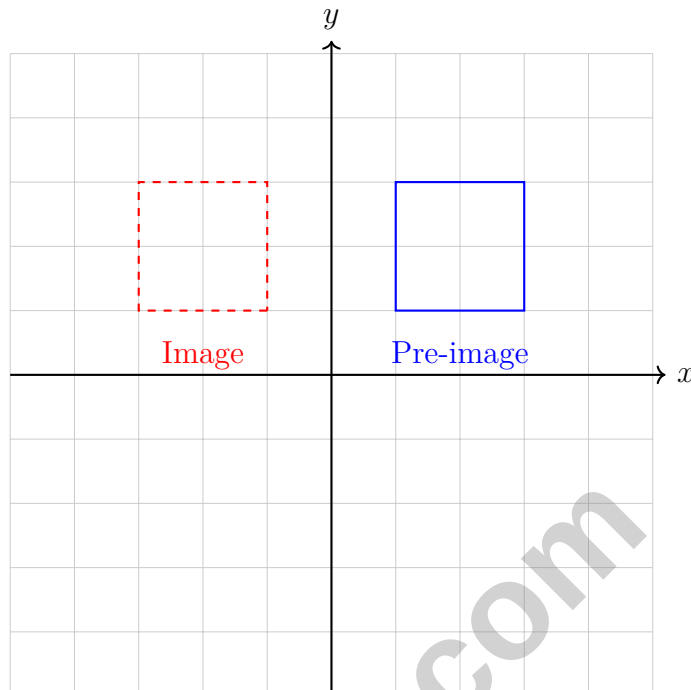
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1)

Which transformation maps the blue figure (pre-image) to the red figure (image)?

- | | |
|---|---|
| ☐ A. Translation by $(-2, 0)$ | ☐ C. Rotation of 90° counterclockwise |
| ☐ B. Reflection over the y -axis | ☐ D. Reflection over the x -axis |

2) A librarian predicted 900 visitors in a month, but 1000 actually visited. What is the percent error?

- | | |
|-----------------------------------|---------------------------------|
| ☐ A. 11.1% | ☐ C. 9% |
| ☐ B. 100% | ☐ D. 10% |



3) Expand: $-5(4 - n)$

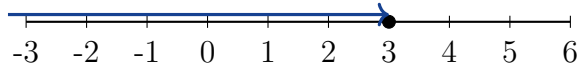
☐ A. $-20 + 5n$

☐ C. $20 + 5n$

☐ B. $-20 - 5n$

☐ D. $5n - 4$

4) Which number line represents the inequality $x \leq 3$?



☐ A. Open circle at 3 pointing left

☐ C. Open circle at 3 pointing right

☐ B. Closed circle at 3 pointing left

☐ D. Closed circle at 0 pointing left

5) An account balance grows from \$4000 to \$4900 over 5 years using simple interest. What was the annual interest rate?

☐ A. 3%

☐ C. 4.5%

☐ B. 5%

☐ D. 4%

6) A floor plan uses a scale of $\frac{1}{4}$ inch to 1 foot. If a hallway on the plan is 1.5 inches long, what is the actual length?

☐ A. 8 feet

☐ C. 2 feet

☐ B. 4 feet

☐ D. 6 feet

7) Simplify: $5p + 2q + 3p - q + 4q$

☐ A. $8p + 5q$

☐ C. $5p + 2q$

☐ B. $8p + 6q$

☐ D. $12pq$



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8) Factor out the GCF from $10xy + 15y + 5$:

☐ A. $5(2xy + 3y + 1)$

☐ C. $10(xy + 1.5y + 0.5)$

☐ B. $5y(2x + 3 + \frac{1}{y})$

☐ D. $y(10x + 15 + 5y)$

9) A water tank is 40% full. If the tank holds 250 liters, how many liters of water are in it?

☐ A. 80 liters

☐ C. 120 liters

☐ B. 150 liters

☐ D. 100 liters

10) A retailer marks items up by 45% from their cost of \$60. What is the selling price?

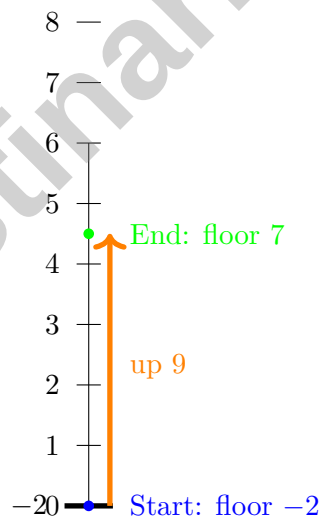
☐ A. \$105

☐ C. \$33

☐ B. \$270

☐ D. \$87

11) An elevator starts at floor -2 (basement). It goes up 9 floors. What floor is it on?


☐ A. Floor -11
☐ C. Floor 7

☐ B. Floor -7
☐ D. Floor 11


1)

Outcome	<i>T</i>	<i>U</i>	<i>V</i>	<i>W</i>
Probability	$\frac{1}{6}$	$\frac{1}{3}$	$\frac{1}{4}$	?

Find the missing probability.

- ☐ A. $\frac{1}{12}$
☐ B. $\frac{5}{12}$

- ☐ C. $\frac{1}{4}$
☐ D. $\frac{7}{12}$

2) A scale model of a car is drawn at a scale of 1 in : 5 ft. If the model is 8 inches long, what is the length of the actual car?

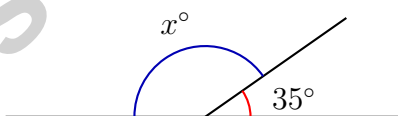
- ☐ A. 13 ft
☐ B. 40 ft

- ☐ C. 45 ft
☐ D. 64 ft

3) A rectangular prism with dimensions 5 cm $\times$ 7 cm $\times$ 10 cm is cut by a plane parallel to the base. The cross-section is a rectangle with area 35 cm². Which dimension of the prism determines the area of the cross-section?

- ☐ A. The height only
☐ B. The base dimensions (5 cm $\times$ 7 cm)
☐ C. The sum of all dimensions
☐ D. The lateral surface area

4)

A ray divides a straight angle into two angles of 35° and x . Find x .

- ☐ A. 35°
☐ B. 55°

- ☐ C. 145°
☐ D. 215°



- 5) An athlete's personal record was 12 seconds. After training, the record improved to 10.56 seconds. What is the percent decrease in time?

- 6) A landscape architect creates a garden design at scale 1 inch = 4 feet. A semicircular path on the design measures 2.5 inches in diameter. What is the actual diameter of the path?

- ☐ A. 8 feet ☐ C. 10 feet
☐ B. 9 feet ☐ D. 12 feet

- 7) If a circle's circumference is 88 units and $\pi \approx \frac{22}{7}$, what is its radius?

- ☐ A. 7 units ☐ C. 28 units
☐ B. 14 units ☐ D. 44 units

- 8) A water tank in the shape of a cylinder has a radius of 4 feet and a height of 10 feet. Find the volume. Use $\pi \approx 3.14$.

- ☐ A. 125.6 ft³ ☐ C. 502.4 ft³
☐ B. 251.2 ft³ ☐ D. 1004.8 ft³

- 9) A student compared two datasets with the same mean of 50 and concluded, "Dataset A is better because it has a larger range." Is the student correct?

- ☐ A. Yes, larger range always means better data quality ☐ C. The ranges must be equal if means are equal
☐ B. No, larger range indicates more variability, not quality ☐ D. Cannot judge without sample sizes



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- 1) A triangle has sides of 3.2 cm and 5.1 cm. Which range gives all possible values for the third side?

- ☐ A. $1.9 < c < 8.3$ cm ☐ C. $3.2 < c < 5.1$ cm
☐ B. $1.9 \leq c \leq 8.3$ cm ☐ D. $0 < c < 8.3$ cm

- 2) A travel agent books a vacation package costing \$2,000 and earns a 5% commission. The client also adds travel insurance for \$150. What is the agent's commission on just the package?

- ☐ A. \$160 ☐ C. \$150
☐ B. \$110 ☐ D. \$100

3)

Gross	Federal	Social	Net
\$2000	\$240	\$153	\$?

A pay stub shows gross income of \$2,000, federal tax withholding of \$240, and Social Security withholding of \$153. What is the net pay?

- ☐ A. \$1,607 ☐ C. \$1,847
☐ B. \$1,760 ☐ D. \$1,900

- 4) A smoothie recipe uses ingredients in this ratio:

Berries (cups)	1	2.5	x
Yogurt (cups)	0.5	y	4

What is $x + y$?

- ☐ A. 10 ☐ C. 8
☐ B. 11 ☐ D. 9.25



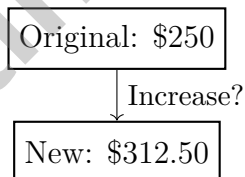
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- 5) A retirement account balance nearly triples in 12 years with annual compound interest. Which rate is most consistent with this growth?

Rate	At 6 yrs	At 12 yrs	Multiplier	Triples?
2%	\$1,126	\$1,268	1.27x	No
6%	\$1,419	\$2,013	2.01x	No
9.5%	\$1,629	\$2,652	2.65x	Close!
15%	\$2,313	\$5,350	5.35x	No

- ☐ A. 2% ☐ C. 9.5%
☐ B. 6% ☐ D. 15%
- 6) A proportional relationship passes through the points (6, 2) and (0, 0). What is the constant of proportionality?

7)



A diagram shows an original price of \$250 increased to \$312.50. What is the percent increase?

- ☐ A. 20% ☐ C. 30%
☐ B. 62.50% ☐ D. 25%



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 B is correct.** (7.G.1-7.G.5) The blue square at $x \in [1, 3]$ maps to the red square at $x \in [-3, -1]$. This is a reflection over the y -axis.
- 2) **Choice D is correct.** (7.RP.3) Percent error = $\frac{|900-1000|}{1000} \times 100\% = \frac{100}{1000} \times 100\% = 10\%$.
- 3) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute -5 : $-5(4) - 5(-n) = -20 + 5n$.
- 4) **Choice B is correct.** (7.EE.4b) $x \leq 3$ means less than or equal to 3 (includes 3), so use a closed circle at the boundary 3 and an arrow pointing left toward smaller values.
- 5) **Choice D is correct.** (7.RP.3) Interest: $4900 - 4000 = \$900$. $900 = 4000 \times r \times 5 \Rightarrow 900 = 20000r \Rightarrow r = 0.04 = 4\%$.
- 6) **Choice D is correct.** (7.RP.1-7.RP.3) The scale $\frac{1}{4}$ inch : 1 foot means 1 inch : 4 feet. So $1.5 \times 4 = 6$ feet.
- 7) **Choice A is correct.** (7.EE.1) Combine p terms and q terms: $(5 + 3)p + (2 - 1 + 4)q = 8p + 5q$.
- 8) **Choice A is correct.** (7.EE.1-7.EE.2) GCF of 10, 15, and 5 is 5. Factor: $10xy + 15y + 5 = 5(2xy + 3y + 1)$.
- 9) **Choice D is correct.** (7.RP.3) 40% of 250 is $0.40 \times 250 = 100$ liters.
- 10) **Choice D is correct.** (7.RP.3) Markup = $0.45 \times 60 = \$27$. Selling price = $60 + 27 = \$87$.
- 11) **Choice C is correct.** (7.NS.1b) Starting at floor -2 and moving up 9 floors: $-2 + 9 = 7$. The elevator reaches floor 7.
- 12) **Choice C is correct.** (7.G.4-7.G.6) A cube has 6 faces, each with area s^2 . The surface area formula is $SA = 6s^2$. Setting this equal to 600 gives $6s^2 = 600$.
- 13) **Choice B is correct.** (7.SP.5-7.SP.8) Relative frequency: $\frac{35}{200} = 0.175 \approx 0.17$. (Note: theoretical probability is $\frac{6}{36} = \frac{1}{6} \approx 0.167$, so the simulation is very close.)
- 14) **Choice D is correct.** (7.RP.1-7.RP.3) The price per drink is $\frac{30}{5} = 6$ dollars. So $r = 6d$.
- 15) **Choice B is correct.** (7.NS.1-7.NS.3) $3.9 \times 10^6 = 3,900,000$ and $4.1 \times 10^5 = 410,000$. Since the exponent 6 is larger, 3.9×10^6 is larger.
- 16) **Choice B is correct.** (7.EE.1-7.EE.2) The sum of x and 3 is $(x + 3)$. Eight times this is $8(x + 3)$.
- 17) **Choice A is correct.** (7.EE.4b) "A number plus 8" translates to $x + 8$, and "is less than" translates to $<$.
- 18) **Choice D is correct.** (7.G.4-7.G.6) Incorrect: $3.14 \times 8^2 = 3.14 \times 64 = 200.96 \text{ in}^2$. Correct: $r = 4$, so $A = 3.14 \times 16 = 50.24 \text{ in}^2$.
- 19) **The correct answer is A, C.** (7.SP.1-7.SP.4) City A dark roast (42%) > City B dark roast (38%), so A is correct. City B light roast (40%) > City A light roast (35%), so C is correct. B is wrong (survey size not given). D is wrong (A: 23%, B: 22%).
- 20) **Choice B is correct.** (7.SP.1-7.SP.4) Patients at a heart disease clinic have higher cholesterol by definition. This sampling method systematically selects people with elevated cholesterol, making them unrepresentative of all city adults. This bias in WHO is selected is selection bias.
- 21) **Choice B is correct.** (7.SP.1-7.SP.4) Range measures spread. Class A's range of 36 points (96–60) vs. Class B's range of 16 points (86–70) shows Class B's scores are tighter around the mean, indicating less variability and more consistency.
- 22) **Choice D is correct.** (7.RP.1-7.RP.3) The unit-rate point (1, 0.8) shows that $k = 0.8$, so the equation is $y = 0.8x$.
- 23) **Choice C is correct.** (7.RP.3) Multiply 2 by 1.5: $2 \times 1.5 = 3$ cups. Alternatively, using a proportion: $\frac{150}{100} = \frac{x}{2}$, so $x = 3$.
- 24) **Choice D is correct.** (7.RP.3) $20\% \times \$500 = 0.20 \times 500 = \100 is correct. Options A, C, and D represent common errors (wrong percent, tax confusion, and flipping categories).
- 25) **Choice A is correct.** (7.NS.1-7.NS.3) When adding two negative numbers, add their absolute values and keep the negative sign: $-5 + (-2) = -(5 + 2) = -7$.
- 26) **Choice D is correct.** (7.NS.1-7.NS.3) $8 \div \frac{1}{4} = 8 \times \frac{4}{1} = 32$.
- 27) **The correct answer is -17 .** (7.NS.1-7.NS.3) After descending: $0 - 25 = -25$. After ascending 8 meters: $-25 - (-8) = -25 + 8 = -17$. She is 17 meters below sea level.
- 28) **Choice B is correct.** (7.NS.2d) Divide $11 \div 50 = 0.22$. Since $50 = 2 \times 5^2$, the result is terminating.



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Hi, Strategy Solver!

◇ Grade 7 math rewards students who think before they calculate. You practiced choosing strategies, not just hunting for answers. This short, concentrated book gave you three focused Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. ◇

★ **Remember this:** That matters because stronger math students do not use one method for every question. They notice the structure and choose the tool that fits. ★

Strategy Moves

- **Estimate:** Know the neighborhood of the answer.
- **Simplify:** Rewrite numbers in friendlier forms.
- **Model:** Draw what the words describe.
- **Verify:** Put the answer back into the problem.

Grade 7 test-day tip: Pause for ten seconds before hard questions. A short plan can save several minutes.

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

Jay Daie

Your Strategy Guide

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **3** full-length Math practice tests and **2** online tests to help Grade 7 students build confidence, strengthen skills, and excel on standardized assessments.

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



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2 Online Practice Tests

 Detailed Answers & Explanations



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Learn from clear explanations and step-by-step solutions.



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