

8

Colorado CMAS

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



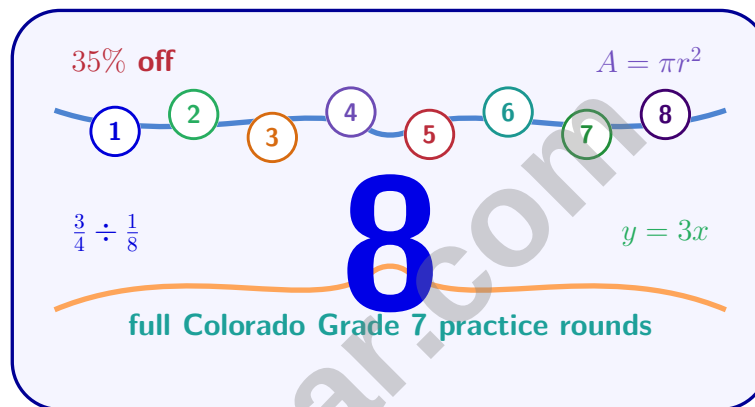
THINK SMARTER



BE TEST-READY

8 Colorado CMAS Grade 7 Math Practice Tests

Confident preparation with Colorado Grade 7 proportions, expressions, inequalities, circles, surface area, and probability



Eight complete 40-question Grade 7 CMAS 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, Colorado Grade 7 Problem Solver!

Eight focused rounds for sharper CMAS math thinking

This book gives you eight full Grade 7 CMAS 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 Colorado 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.

Colorado 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 CMAS 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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& answers

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- 1) A student is writing an equation for a word problem. The problem states: “A book club charges a \$10 membership and \$3 per book borrowed.” The student writes $3 + 10b = \text{total}$. What is the error?

- ☐ A. The constant 10 should be multiplied by b .
- ☐ B. The coefficient 3 should be the constant term.
- ☐ C. The variable b should be a different letter.
- ☐ D. There is no error; the equation is correct.

- 2) A number in standard form is 0.000000456 meters. What is the leading digit in its scientific notation form?

- ☐ A. 4
- ☐ B. 5
- ☐ C. 6
- ☐ D. Cannot determine

- 3) Simplify: $\frac{b^8}{b^3}$

- ☐ A. b^5
- ☐ B. b^{11}
- ☐ C. b^{24}
- ☐ D. b^{-5}

- 4)
- | | | |
|------------------|---|--------------------|
| Start: 500 m | → | After change: ? |
| ⏟
Climb 320 m | | ⏟
Descend 150 m |

A climber starts at 500 m elevation, climbs 320 m, then descends 150 m. What is the final elevation?

- ☐ A. 150 m
- ☐ B. 320 m
- ☐ C. 670 m
- ☐ D. 970 m



5) A charity collects \$150.50 on Monday, \$225.75 on Tuesday, and spends \$180.25 on supplies. How much is left?

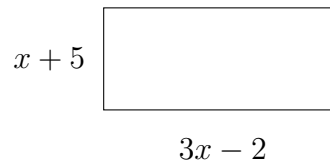
☐ A. \$196.00

☐ C. \$195.50

☐ B. \$405.75

☐ D. \$195.00

6) A rectangle's sides are $(x + 5)$ and $(3x - 2)$. What is the perimeter?



☐ A. $8x + 6$

☐ C. $8x + 3$

☐ B. $4x + 3$

☐ D. $8x - 6$

7) A video game costs \$50. With a 12% sales tax, the total cost is 50×1.12 . What does 1.12 represent?

☐ A. The percent of tax

☐ C. The discount

☐ B. The percent of the original price paid (including tax)

☐ D. The final price

8) A budget allocates 40% to housing and 20% to food from a monthly income of \$2 200. How much is allocated to housing and food combined?



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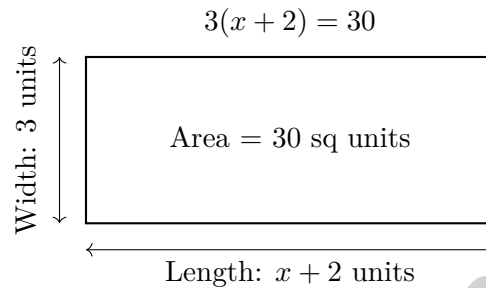
9) Solve: $2(x + 3) = 14$

☐ A. $x = 2$

☐ C. $x = 4$

☐ B. $x = 3$

☐ D. $x = 7$



10)

A rectangle has width 3 and length $x + 2$. If the area is 30 square units, what is the length?

☐ A. $x + 2 = 8$

☐ C. $x + 2 = 12$

☐ B. $x + 2 = 10$

☐ D. $x + 2 = 15$

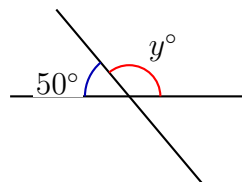
11) A taxi charges \$3 per mile plus a \$2 fee. If a trip costs \$17, how many miles was the trip? Check your answer is reasonable.

☐ A. 3 miles

☐ C. 6 miles

☐ B. 5 miles

☐ D. 8 miles



12)

Two straight lines intersect. One angle formed is 50° . What is the measure of the angle marked y ?

☐ A. 130°

☐ C. 50°

☐ B. 90°

☐ D. 140°



1) If $x\%$ of 80 is 16, what is x ?

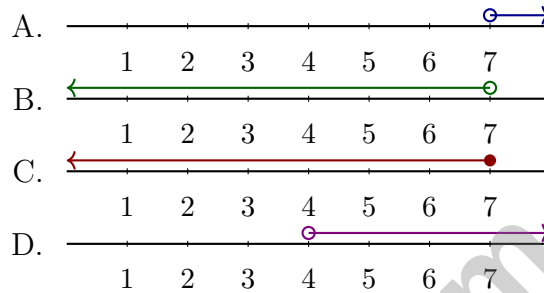
☐ A. 10

☐ C. 20

☐ B. 16

☐ D. 64

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



3) Simplify: $(-2i + 10) + (6i - 8) - (i + 1)$

☐ A. $3i + 1$

☐ C. $5i - 1$

☐ B. $4i + 2$

☐ D. $3i - 1$

4) Which expression is equivalent to $12m + 18n$?

☐ A. $6(2m + 3n)$

☐ C. $2(6m + 9n)$

☐ B. $6(12m + 18n)$

☐ D. $12(m + 1.5n)$

5) Temperature drops 20 degrees from 10 degrees. Express the drop (change) as a signed number.

☐ A. 20 (ignores the direction of change)

☐ D. -20 (correct; drop is negative change)

☐ B. 30 (adds instead of subtracts)

☐ C. -10 (starting temperature)



6) Two chemical batches' purity levels (percentages):

Batch	Q1	Q3	Median
Batch Alpha	88	94	91
Batch Beta	90	93	91.5

For consistent, high-purity production, which batch is superior?

- ☐ A. Batch Alpha (wider IQR shows diversity in purity)
 ☐ C. Both are identical
 ☐ D. Cannot determine without knowing
- ☐ B. Batch Beta (narrower IQR = tighter quality, higher Q1)
- 7) A bar graph shows: Salaries \$6M, Programs \$2M, Facilities \$1.5M, Admin \$0.5M. The bars extend to heights 6, 2, 1.5, and 0.5 respectively. However, the y-axis has no label indicating units. What makes this graph misleading?
- ☐ A. The y-axis label is missing, so readers cannot confirm the unit (millions versus thousands)
 ☐ B. The bars are not drawn to scale
 ☐ C. The title is unclear
 ☐ D. The colors are too similar
- 8) A fair six-sided die is rolled once. What is the probability of rolling a number greater than 4?
- ☐ A. $\frac{1}{6}$
☐ C. $\frac{1}{2}$
☐ B. $\frac{1}{3}$
☐ D. $\frac{2}{3}$
- 9) A student rolls a die labeled 1 to 6 and picks a fruit from {Apple, Orange, Banana}. The student claims there are 18 outcomes in the sample space. Is this correct?
- ☐ A. Yes, $6 \times 3 = 18$
☐ C. No, there are 24 outcomes
 ☐ B. No, there are only 9 outcomes
 ☐ D. No, there are 36 outcomes



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- 1) A fitness app tracks calories burned during workouts. The equation $c = 8m$ shows calories c burned in m minutes. What does the 8 represent?

- ☐ A. Total calories burned ☐ C. Number of minutes
☐ B. Total workout time ☐ D. Calories burned per minute

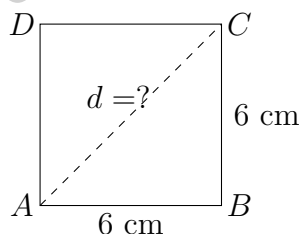
- 2) A running club tracks weekly mileage for two runners over 5 weeks:

Runner	5-Week Data	Conclusion
Alex	10, 12, 11, 13, 9	Mean = 11, MAD = 1.2
Blake	5, 20, 10, 15, 10	Mean = 12, MAD = 4.0

Which interpretation is correct?

- ☐ A. Alex is more disciplined (consistent 11 mi/week) ☐ C. Both runners cover identical weekly distances
☐ B. Blake averages more miles per week ☐ D. Blake is more consistent
- 3) A card is drawn from a standard deck of 52 cards. What is $P(\text{King})$?

- ☐ A. $\frac{1}{52}$ ☐ C. $\frac{1}{4}$
☐ B. $\frac{1}{13}$ ☐ D. $\frac{1}{2}$



4)

A square has a side length of 6 cm. What is the length of its diagonal?

- ☐ A. 6 cm ☐ C. 12 cm
☐ B. $6\sqrt{2}$ cm ☐ D. $\sqrt{36}$ cm



5) Expand: $-6(2 - 3p)$

☐ A. $-12 + 18p$

☐ B. $-12 - 18p$

☐ C. $12 + 18p$

☐ D. $-12 - 3p$

6) What is $-9 - (-3)$?

☐ A. -12

☐ B. 12

☐ C. 6

☐ D. -6

Markup Table	
Cost	Selling Price
\$40	\$56
\$50	?
\$100	\$140

7)

A store uses a consistent markup strategy. Based on the table, what should be the selling price for an item that costs \$50?

☐ A. \$65

☐ B. \$75

☐ C. \$60

☐ D. \$70

8) What is $\frac{3}{4}$ of 200?



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Colorado CMAS 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 Colorado CMAS practice test.

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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice A is correct.** (7.EE.4a) The student reversed the roles of the coefficient and constant. The per-book charge \$3 multiplies the number of books b .
- 2) **Choice A is correct.** (7.NS.1-7.NS.3) $0.000000456 = 4.56 \times 10^{-7}$. The leading digit is always the first nonzero digit.
- 3) **Choice A is correct.** (7.EE.1-7.EE.2) Quotient rule: $\frac{b^8}{b^3} = b^{8-3} = b^5$.
- 4) **Choice C is correct.** (7.NS.1-7.NS.3) Start 500 m, climb 320 m: $500 + 320 = 820$ m. Descend 150 m: $820 - 150 = 670$ meters.
- 5) **Choice A is correct.** (7.NS.1-7.NS.3) Collected: $150.50 + 225.75 = 376.25$. Left: $376.25 - 180.25 = 196.00$ dollars.
- 6) **Choice A is correct.** (7.EE.1-7.EE.2) Perimeter = $2(x + 5) + 2(3x - 2) = 2x + 10 + 6x - 4 = 8x + 6$.
- 7) **Choice B is correct.** (7.EE.1-7.EE.2) The multiplier $1.12 = 100\% + 12\%$ means you pay 112% of the original price.
- 8) **The correct answer is \$1320.** (7.RP.3) Housing: $0.40 \times 2200 = \$880$. Food: $0.20 \times 2200 = \$440$. Combined: $\$880 + \$440 = \$1320$.
- 9) **Choice C is correct.** (7.EE.3-7.EE.4) Divide by 2: $x + 3 = 7$. Subtract 3: $x = 4$.
- 10) **Choice B is correct.** (7.EE.4a) Area: $3(x + 2) = 30$. Divide by 3: $x + 2 = 10$. (So length is 10 units; if needed, $x = 8$.)
- 11) **Choice B is correct.** (7.EE.3-7.EE.4) Set up: $3m + 2 = 17$. Subtract 2: $3m = 15$. Divide by 3: $m = 5$ miles. Check: $3(5) + 2 = 15 + 2 = 17$ ✓. Reasonable: 5 miles at \$3/mile plus \$2 fee totals \$17.
- 12) **Choice A is correct.** (7.G.1-7.G.5) Adjacent angles on a straight line are supplementary: $y = 180 - 50 = 130^\circ$.
- 13) **Choice A is correct.** (7.SP.3) Reliability combines speed and consistency. Driver A has a faster (lower) median (550 vs. 600) and smaller IQR (100 vs. 200), meaning more predictable reaction times.
- 14) **Choice A is correct.** (7.SP.5-7.SP.8) Probabilities must sum to 1: $0.1 + 0.2 + 0.3 + 0.25 + P(5) = 1 \Rightarrow P(5) = 0.15$.
- 15) **The correct answer is 10%.** (7.RP.3) Percentage growth = $(\$5,500 - \$5,000) \div \$5,000 = \$500 \div \$5,000 = 0.10 = 10\%$.
- 16) **The correct answer is $\frac{3}{4}$.** (7.NS.1-7.NS.3) Common denominator is 12: $\frac{5}{12} + \frac{4}{12} = \frac{9}{12} = \frac{3}{4}$.
- 17) **Choice C is correct.** (7.RP.3) Tip percentage = $\frac{12}{60} = 0.20 = 20\%$.
- 18) **Choice A is correct.** (7.NS.2) $\frac{3}{4} \times 8 = \frac{3 \times 8}{4} = \frac{24}{4} = 6$.
- 19) **Choice B is correct.** (7.SP.1-7.SP.4) Students with < 35 min: 20, 25, 28, 29, 32 (from stems 2 and first leaf of 3). Total: 5 students.
- 20) **Choice A is correct.** (7.G.4-7.G.6) Rectangle 1: $4 \times 2 = 8 \text{ m}^2$. Rectangle 2: $3 \times 2 = 6 \text{ m}^2$. Rectangle 3: $2 \times 2 = 4 \text{ m}^2$. Total: $8 + 6 + 4 = 18 \text{ m}^2$.
- 21) **Choice C is correct.** (7.RP.1-7.RP.3) Gallons needed: $350 \div 28 = 12.5$ gallons. Total cost: $12.5 \times 3.20 = 40$ dollars.
- 22) **The correct answer is A,D.** (7.RP.3) 1st try: $\frac{|35-40|}{40} \times 100\% = 12.5\%$ (A is true). 2nd try: $\frac{|38-40|}{40} \times 100\% = 5\%$ (B is false). C is false (2nd is more accurate). D is true (both $< 15\%$). 5 times 2nd, not exactly double).
- 23) **Choice A is correct.** (7.G.4-7.G.6) The student calculated $SA = 2(lw + lh + wh) = 2(80 + 30 + 24) = 268 \text{ cm}^2$ (approximately 280), confusing SA with volume. Volume is $V = 10 \times 8 \times 3 = 240 \text{ cm}^3$.
- 24) **Choice B is correct.** (7.G.4-7.G.6) The shaded region bounded by two radii (OP and OQ) and the arc PQ is a sector.
- 25) **Choice B is correct.** (7.G.1-7.G.5) When constructing a right triangle with a known right angle, hypotenuse, and one leg, the RHS condition guarantees a unique triangle. This is a special case applicable only to right triangles.
- 26) **Choice A is correct.** (7.SP.5-7.SP.8) Pairs summing to 7: (1,6), (2,5), (3,4), (4,3), (5,2), (6,1) = 6 outcomes. Total outcomes = $6 \times 6 = 36$. Probability = $\frac{6}{36}$.
- 27) **Choice C is correct.** (7.SP.1-7.SP.4) $\frac{28}{70} = \frac{x}{3500}$. Reduce: $\frac{2}{5} = \frac{x}{3500} \Rightarrow x = 1400$.
- 28) **Choice A is correct.** (7.NS.1-7.NS.3) To cancel out a debt of -75 , you must add $+75$. Their sum is zero: $-75 + 75 = 0$.
- 29) **Choice D is correct.** (7.RP.1-7.RP.3) Table P: $4/1 = 4$, $8/2 = 4$, $12/3 = 4$ (constant ratio $k = 4$, proportional). Table Q: $5/1 = 5$, $9/2 = 4.5$, $13/3 \approx 4.33$ (not constant).
- 30) **Choice D is correct.** (7.RP.1-7.RP.3) Unit rate: $\frac{1/2}{2} = \frac{1}{4}$ cup per dozen. For 5 dozen: $\frac{1}{4} \times 5 = \frac{5}{4}$ cups.



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Hi, Brave Learner!

◇ No one gets stronger by only doing easy problems. The questions that slowed you down were part of the training. This wide-ranging book gave you eight serious Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. ◇

★ **Remember this:** Mistakes are not proof that you cannot do math. They are directions. They show what to review, what to ask about, and what to practice next. ★

How to Use Mistakes

- **Name It:** Was it reading, setup, arithmetic, or checking?
- **Fix It:** Correct the work while the question is fresh.
- **Repeat It:** Try one similar problem soon.
- **Remember It:** Write the lesson in your own words.

Grade 7 test-day tip: Treat every corrected error as a point you are preparing to earn next time.

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

Jay Daie

Your Brave-Learning Coach

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!

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