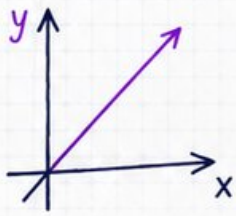
3 Colorado CMAS PRACTICE TESTS

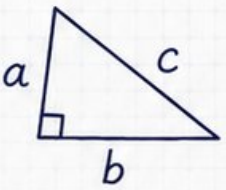
GRADE 7 MATH

- 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

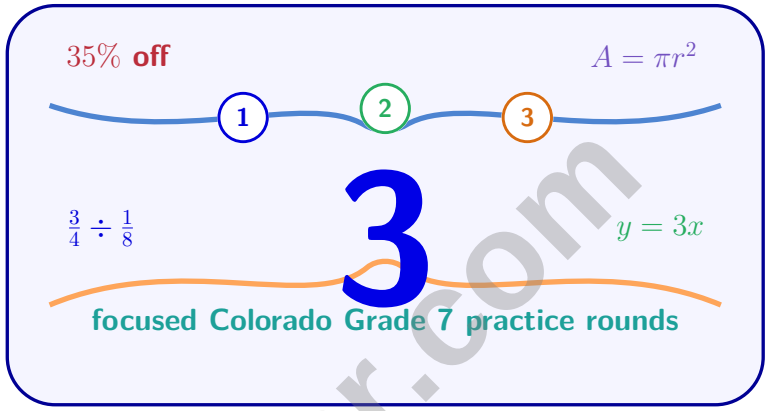
USE THESE TWO ADDITIONAL ONLINE PRACTICE TESTS

FOR EXTRA REVIEW AFTER THE PRINTED TESTS IN THIS BOOK.

- Build Confidence
- Strengthen Math Skills
- Detailed Answers & Explanations
- Improve Test Performance

3 Colorado CMAS Grade 7 Math Practice Tests

Colorado Math Practice with Review Rounds and Full Keys



Three 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!

Three focused rounds for sharper CMAS math thinking

This book gives you three 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.

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.

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?

Three CMAS 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.

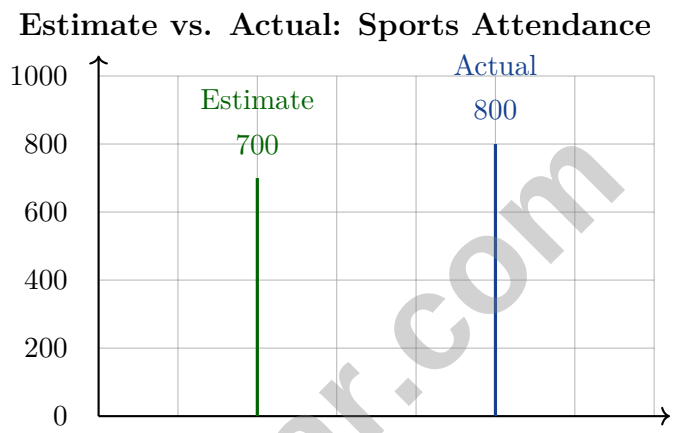
The tests are mixed on purpose. Grade 7 success means recognizing which idea is being tested even when the next question changes format.

Table of Contents

1) When a cube is cut by a plane passing through the midpoints of four edges (forming a square), what is the relationship between this square and the cube's faces?

☐ A. The square is congruent to the cube's faces
☐ B. The square has the same perimeter as the cube's faces
☐ C. The square has a side length $\frac{1}{\sqrt{2}}$ times the cube's edge
☐ D. The square has area $\frac{1}{2}$ the area of a face

2)



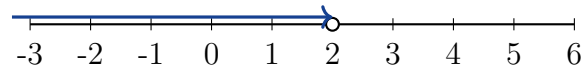
What is the percent error for the attendance estimate?

☐ A. 14.3%
☐ B. 8.75%
☐ C. 100%
☐ D. 12.5%

3) Expand: $2(x + 3 + 4)$

☐ A. $2x + 6$
☐ B. $2x + 14$
☐ C. $6x + 7$
☐ D. $x + 7$

4) If the solution to an inequality is all numbers less than 2, which circle and arrow are needed?



☐ A. Closed circle at 2 pointing right
☐ B. Open circle at 2 pointing right
☐ C. Open circle at 2 pointing left
☐ D. Closed circle at 2 pointing left

5) A large blueprint has scale 2 inches : 5 feet. What is the actual length if the blueprint shows 10 inches?

☐ A. 4 feet
☐ B. 12.5 feet
☐ C. 20 feet
☐ D. 25 feet

6)

Discount (%)	Amount ($)	Total Price ($)
10	5	45
20	10	40
25	?	30

Using the ratio table, what is the discount amount for a 25% discount?

☐ A. $8
☐ B. $15
☐ C. $12
☐ D. $10

7) A hat is priced at $28. After a $\frac{1}{4}$ discount, what is the sale price?

☐ A. $35
☐ B. $14
☐ C. $7
☐ D. $21

8) A family takes out a personal loan of \$8000 at 10% simple interest for 3 years. What is the total amount they will repay?

☐ A. \$8800
☐ B. \$9200
☐ C. \$10400
☐ D. \$11200

9) Which statement is true?

☐ A. $-5 + 3 = 8$
☐ B. $-12 + 20 = -8$
☐ C. $4 + (-9) = 5$
☐ D. $-5 + 3 = -2$

10) Simplify: $-2n - 3n + n$

☐ A. $-4n$
☐ B. $-6n$
☐ C. $4n$
☐ D. $-2n$

11) A bank account has a balance of -45 dollars (overdrawn). After a deposit and withdrawal, the balance becomes -20 dollars. What was the net change in the account (deposit minus withdrawal)? Write your answer as an integer with the appropriate sign.

12) Which expression is NOT equivalent to $8(x + 2)$?

☐ A. $8x + 16$
☐ B. $4(2x + 4)$
☐ C. $8x + 2$
☐ D. $2(4x + 8)$

1) Which inequality represents "the sum of a number and 2 is not equal to 7"?

☐ A. $n + 2 \neq 7$
☐ B. $n + 2 = 7$
☐ C. $n \neq 5$
☐ D. $n + 7 \neq 2$

2)

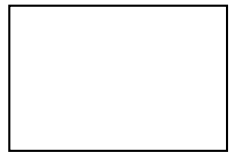
x	$x + 3$	$2(x + 3)$	$2(x + 3) - 5$
1	4	8	3
2	5	10	5
3	6	12	7

If $2(x + 3) - 5 = 11$, what is x? Show steps and verify.

☐ A. $x = 3$
☐ B. $x = 5$
☐ C. $x = 7$
☐ D. $x = 9$

3) A pair of shoes is on sale for \$60 after a 25% discount. What was the original price of the shoes?

Scale: 1 cm : 2.5 m



3.6 cm ×2.4 cm

4)

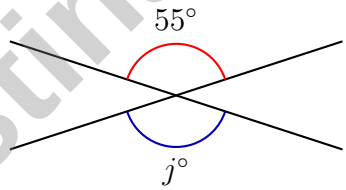
A scale drawing of a loading dock is 3.6 cm by 2.4 cm with a scale of 1 cm : 2.5 m. What is the area of the actual loading dock in square meters?

☐ A. 8.64 m^2
☐ B. 21.6 m^2
☐ C. 54 m^2
☐ D. 81 m^2

5) A rectangular patio in a landscape design is 4 inches by 5 inches at scale 1 in : 3 ft. What is the perimeter of the actual patio in feet?

☐ A. 18 ft
☐ B. 27 ft
☐ C. 54 ft
☐ D. 30 ft

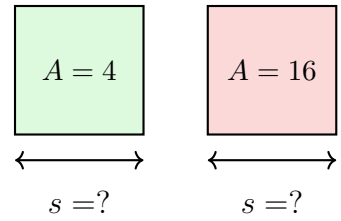
6)



Two intersecting lines form vertical angles. One angle is marked as 55°. What is the measure of angle j vertically opposite to it?

☐ A. 35°
☐ B. 55°
☐ C. 125°
☐ D. 235°

1)



Which square has the longer side?

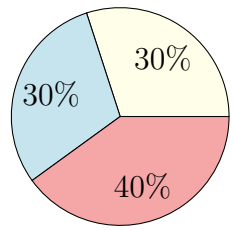
☐ A. The left square (area = 4)
☐ B. The right square (area = 16)
☐ C. They have equal sides
☐ D. Cannot be determined

2) A spinner has 8 equal sections: 4 red, 2 blue, 1 green, 1 yellow. What is $P(\text{red})$ for this uniform model?

☐ A. $\frac{1}{8}$
☐ B. $\frac{1}{4}$
☐ C. $\frac{1}{2}$
☐ D. $\frac{3}{4}$

3) A barber charges \$25 per haircut and performs 8 haircuts in a day. If the barber earns a 40% commission on all haircut fees, what is the total commission for the day?

☐ A. \$40
☐ B. \$200
☐ C. \$100
☐ D. \$80



Needs Wants Savings

4) Using the budget rule shown (Needs 30%, Wants 30%, Savings 40%), if monthly income is $4 000, how much is allocated to savings?

☐ A. $800
☐ B. $1 000
☐ C. $1 200
☐ D. $1 600

5) A student wants to compare compound interest vs. simple interest on $600 at 5% annual rate. After 3 years, what is the difference in interest earned?

☐ A. $0 (they are the same)
☐ B. $1.58
☐ C. $4.58
☐ D. $7.50

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.

Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

1) **Choice D is correct.** 7.G.1-7.G.5 If the cube has edge a, the cross-section through edge midpoints is a square with side $\frac{a}{\sqrt{2}} = \frac{a\sqrt{2}}{2}$, so area $= \left(\frac{a\sqrt{2}}{2}\right)^2 = \frac{a^2}{2}$, which is half the face area a^2.

2) **Choice D is correct.** 7.RP.3 Percent error $= \frac{|700-800|}{800} \times 100\% = \frac{100}{800} \times 100\% = 12.5\%$.

3) **Choice B is correct.** 7.EE.1-7.EE.2 Distribute 2 to all three terms: $2(x) + 2(3) + 2(4) = 2x + 6 + 8 = 2x + 14$.

4) **Choice C is correct.** 7.EE.4b "Less than 2" means < 2 (strict), so use an open circle at 2. The arrow points left toward smaller numbers.

5) **Choice D is correct.** 7.RP.1-7.RP.3 Scale is $2 : 5$, so $1 : 2.5$. Actual length: $10 \times 2.5 = 25$ feet.

6) **Choice D is correct.** 7.RP.3 The original price is \$40 (since 75% of it is \$30). 25% of \$40 is $0.25 \times 40 = 10$ dollars.

7) **Choice D is correct.** 7.RP.3 Discount $= \frac{1}{4} \times 28 = \$7$. Sale price $= 28 - 7 = \$21$.

8) **Choice C is correct.** 7.RP.3 $I = 8000 \times 0.10 \times 3 = \$2400$. $A = 8000 + 2400 = \$10400$.

9) **Choice D is correct.** 7.NS.1b Check each: A: $-5 + 3 = -2$, not 8. B: $-5 + 3 = -2$ ✓. C: $4 + (-9) = -5$, not 5. D: $-12 + 20 = 8$, not -8.

10) **Choice A is correct.** 7.EE.1 Combine: $(-2 - 3 + 1)n = -4n$.

11) **The correct answer is 25 .** 7.NS.1-7.NS.3 Net change = final balance − initial balance $= -20-(-45) = -20+45 = 25$ dollars. The account increased by 25 dollars (a net deposit of 25).

12) **Choice C is correct.** 7.EE.1-7.EE.2 Expand $8(x + 2) = 8x + 16$. Check others: A) $8x + 16$ ✓, B) $4(2x + 4) = 8x + 16$ ✓, D) $2(4x + 8) = 8x + 16$ ✓. Only C) $8x + 2 \neq 8x + 16$ is not equivalent.

13) **Choice C is correct.** 7.G.4-7.G.6 Base area: $5^2 = 25$ cm^2. Lateral area: $4 \times \frac{1}{2} \times 5 \times 6.5 = 65$ cm^2. Total surface area is $25 + 65 = 90$ cm^2.

14) **Choice B is correct.** 7.SP.5-7.SP.8 Total successes: $22 + 28 + 25 + 27 + 23 = 125$. Total trials: $5 \times 100 = 500$. Average estimated probability: $\frac{125}{500} = 0.25$.

15) **Choice D is correct.** 7.RP.1-7.RP.3 The point $(1, 0.4)$ is the unit-rate point, so the constant of proportionality is $k = 0.4$. Therefore, the equation is $y = 0.4x$. (Verify: $(5, 2)$ gives $2 = 0.4 \times 5$ ✓)

16) **Choice C is correct.** 7.NS.2d Divide $7 \div 20 = 0.35$, not 0.7. The student may have confused the operation or misread the fraction.

17) **Choice A is correct.** 7.EE.1-7.EE.2 Substitute: $5(-2) - 2(4) = -10 - 8 = -18$.

18) **Choice B is correct.** 7.EE.4b $x < -2$ means all values less than (but not equal to) -2. Use an open circle and an arrow pointing left.

19) **Choice B is correct.** 7.G.4-7.G.6 Radius is half the diameter: $r = 5$ cm. $V = \pi r^2 h \Rightarrow 785 = 3.14 \times 25 \times h \Rightarrow 785 = 78.5h \Rightarrow h = 10$ cm.

20) **The correct answer is $\frac{9}{2}$.** 7.RP.1-7.RP.3 3 dozen is 6 times $\frac{1}{2}$ dozen, so flour is $\frac{3}{4} \times 6 = \frac{18}{4} = \frac{9}{2} = 4\frac{1}{2}$ cups.

21) **Choice B is correct.** 7.SP.1-7.SP.4 This stratified random sample ensures all classes are represented proportionally. It avoids convenience bias and selection bias.

22) **The correct answer is A,C.** 7.SP.1-7.SP.4 Bread: $0.35 \times 400 = 140$ items, so A is correct. Pastries and cakes together make 200 items, not 50, so B is false. Other: $0.15 \times 400 = 60$ items, so C is correct. Pastries (28%) plus other (15%) equals 43%, not 45%.

23) **Choice B is correct.** 7.SP.1-7.SP.4 A scatter plot reveals association, not causation. Variation in scores at the same sleep duration indicates that other variables (studying, prior knowledge, test anxiety) also influence performance.

24) **Choice B is correct.** 7.SP.5-7.SP.8 Total coins $= 2 + 3 + 5 = 10$. Non-penny coins $= 2 + 3 = 5$. $P(\text{not penny}) = \frac{5}{10} = \frac{1}{2}$.

25) **Choice D is correct.** 7.RP.1-7.RP.3 For a proportional relationship, the ratio $\frac{\text{toys}}{\text{hours}}$ must be constant. Both ratios equal 30 toys per hour, so the relationship is proportional with $k = 30$.

26) **Choice C is correct.** 7.RP.3 Using the proportion $\frac{30}{100} = \frac{p}{100}$, the shaded region covers 30 out of 100 unit squares, representing 30%.

Author's Note

A Note for a Careful Thinker

Hi, Careful Thinker!

◇ This short, concentrated book gave you three focused Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. This book gave you room to practice the kind of thinking seventh graders need: comparing quantities, analyzing patterns, and organizing information. ◇

⋆ **Remember this:** The goal was never just to finish pages. The goal was to become the kind of student who knows how to begin, how to adjust, and how to check. ⋆

Your Careful-Thinking Toolkit

- **Read Twice:** First for the story, second for the math.
- **Label Values:** Give each number a job.
- **Check Signs:** Negatives and inequalities deserve attention.
- **Use Evidence:** Let the work prove the answer.

Grade 7 test-day tip: On test day, underline the question before solving. It keeps your answer aimed at the right target.

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

Jay Daie

Your Math Practice Coach

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.

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:

- **3** Full-Length Printed Tests
- **2** Online Practice Tests
- Detailed Answers & 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

Build Confidence
Practice regularly to feel prepared and test-ready.

Strengthen Math Skills
Develop key math concepts and problem solving abilities.

Detailed Answers & Explanations
Learn from clear explanations and step-by-step solutions.

Improve Test Performance
Apply your knowledge and achieve your best score!

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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FOR MORE PRACTICE TESTS AND LEARNING RESOURCES.

PRACTICE REGULARLY | STAY FOCUSED | SOLVE CONFIDENTLY | SUCCEED BRIGHTLY