

6

COLORADO CMAS

GRADE

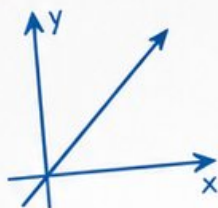
7

MATH

PRACTICE TESTS

Standards Aligned
Problem Solving For
Comprehensive
Assessment Programs

$$y = mx + b$$



$$2(x - 3) = 4x + 6$$



6 PRINTED
TESTS



2 ONLINE
TESTS



USE THESE TWO
**ADDITIONAL ONLINE
PRACTICE TESTS**
FOR EXTRA REVIEW AFTER
THE PRINTED TESTS
IN THIS BOOK.



Build
Confidence



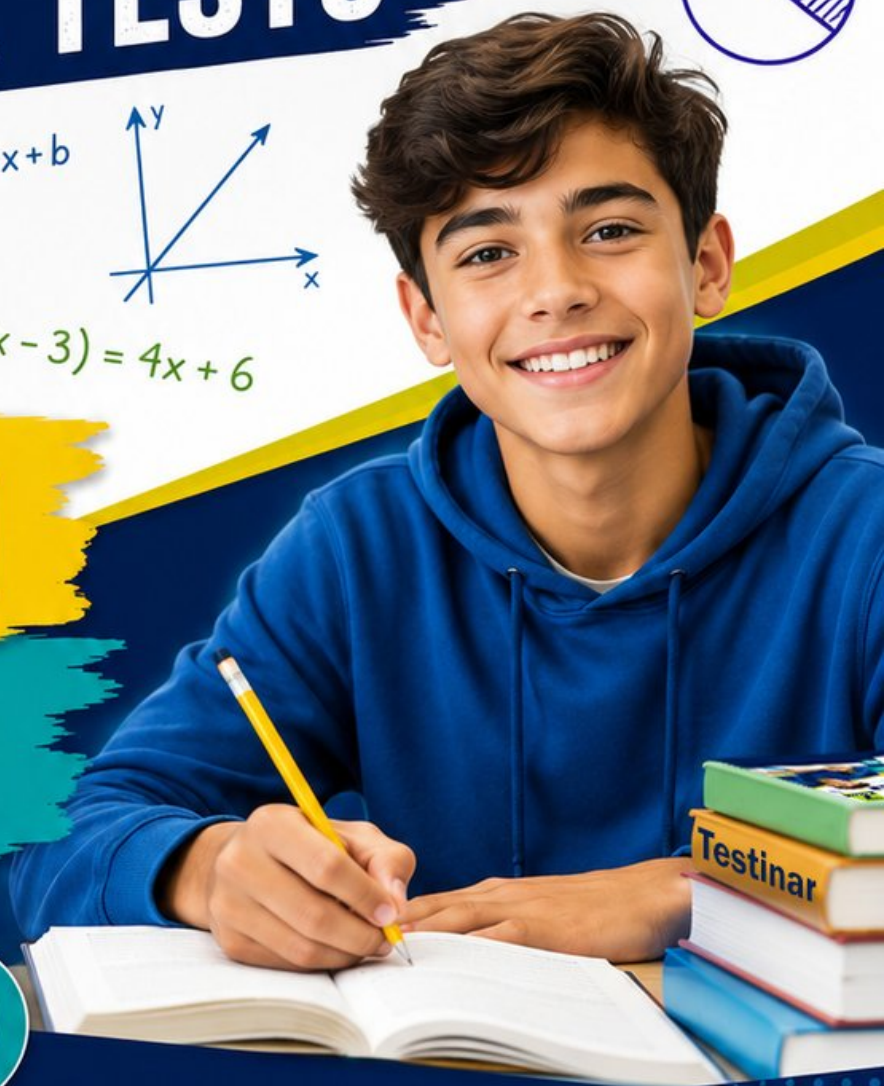
Strengthen
Math Skills



Detailed Answers
& Explanations

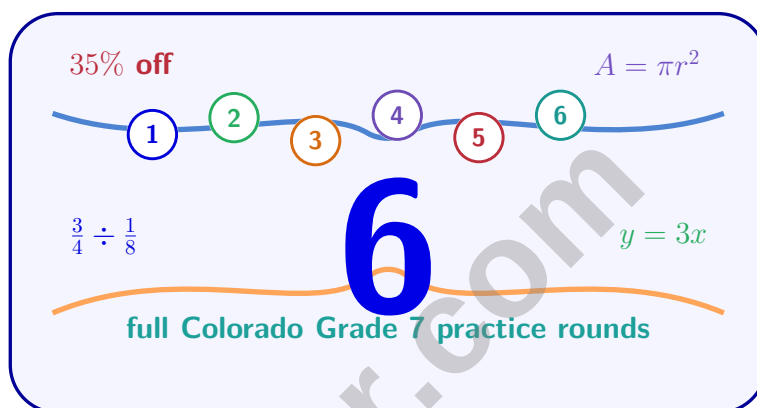


Improve Test
Performance



6 Colorado CMAS Grade 7 Math Practice Tests

Standards-Aligned Practice with Review, Answer Keys, and Explanations



Six 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!

Six focused rounds for sharper CMAS math thinking

This book gives you six 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

A six-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?

Six CMAS tests, 240 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.
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) What is $13 \div (-4)$? (Integer division with remainder)
- ☐ A. -3 ☐ C. 3.25
☐ B. -3.25 ☐ D. Undefined
- 2) A garden has 72 plants. If 25% are flowers and the rest are vegetables, how many vegetables are there?
- ☐ A. 18 ☐ C. 48
☐ B. 36 ☐ D. 54
- 3) A data company offers cloud storage at \$9.99 per month with a one-time activation fee of \$29.99. Which expression shows the total cost C for n months?
- ☐ A. $C = 29.99n + 9.99$ ☐ C. $C = 9.99 + 29.99n$
☐ B. $C = 9.99n + 29.99$ ☐ D. $C = (9.99 + 29.99)n$
- 4) Two similar triangles have areas in the ratio 4 : 9. If the smaller triangle has a base of 8 cm, what is the base of the larger triangle?
-
- 5) A bakery wants to estimate how often customers buy croissants. It surveys only customers who purchase items on a Thursday morning. What population is being studied?
- ☐ A. All customers of the bakery ☐ C. Customers who buy croissants
☐ B. Customers who shop on Thursday morning ☐ D. All people in the neighborhood

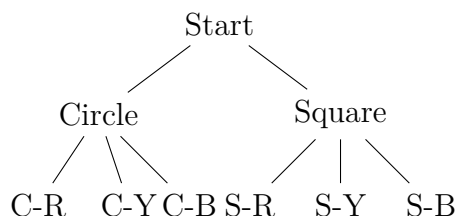


- 6) A student mistakenly calculates the volume of a cylinder with $r = 3$ m and $h = 4$ m by using the formula $V = 2\pi rh$ instead of $V = \pi r^2 h$. Which is the correct volume? Use $\pi \approx 3.14$.
- ☐ A. 75.36 m³ ☐ C. 150.72 m³
☐ B. 113.04 m³ ☐ D. 226.08 m³
- 7) A circle graph shows the breakdown of how students spend their day: Sleep 33%, School 25%, Homework 17%, Recreation 15%, Other 10%. If a student sleeps 8 hours, how many hours does the student spend in school (assuming the percentages hold)?
- ☐ A. 4 hours ☐ C. 8 hours
☐ B. 6 hours ☐ D. 10 hours
- 8) A bag holds 30 marbles: 12 are red, 10 are blue, and 8 are green. What is the probability of drawing a marble that is NOT red?
- ☐ A. $\frac{10}{30}$ ☐ C. $\frac{3}{5}$
☐ B. $\frac{16}{30}$ ☐ D. $\frac{2}{5}$
- 9) Two datasets: Dataset 1: 10, 15, 20, 25, 30 Dataset 2: 15, 18, 20, 22, 25 Both have a median of 20. Which has lower variability?
- ☐ A. Dataset 1 (larger range) ☐ C. Both have equal variability
☐ B. Dataset 2 (more compact) ☐ D. Cannot compare with medians



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- 10) A tree diagram shows all outcomes for selecting a shape (Circle or Square) and a color (Red, Yellow, or Blue). How many final branches should the tree have?



- ☐ A. 2 branches
 ☐ C. 5 branches
☐ B. 3 branches
 ☐ D. 6 branches
- 11) A fair six-sided die is rolled twice. What is the probability of rolling a 3 on the first roll AND a 5 on the second roll?
- ☐ A. $\frac{1}{6}$
☐ C. $\frac{1}{36}$
☐ B. $\frac{1}{12}$
☐ D. $\frac{1}{18}$
- 12) A student conducted a survey of 240 students about their favorite lunch. The results:

Choice	Pizza	Burger	Salad	Pasta
Count	84	72	36	48

Based on experimental data, what is the probability a student chooses either pizza or pasta?

- ☐ A. $\frac{48}{240}$
☐ C. $\frac{132}{240}$
☐ B. $\frac{84}{240}$
☐ D. $\frac{156}{240}$



1) Simplify: 7^1

☐ A. 0

☐ C. 7

☐ B. 1

☐ D. 49

2) Three angles form a straight line and measure 35° , 62° , and x° . What is x ?

☐ A. 27°

☐ C. 97°

☐ B. 83°

☐ D. 180°

3) A stem-and-leaf plot shows:

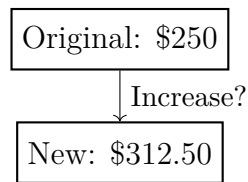
Stem	Leaves
3	1, 4, 7
4	2, 5, 8, 9
5	0, 3, 6

Find the median of the dataset.

4) A scatter plot shows the relationship between study hours (x-axis) and test score (y-axis) for 10 students. The plot shows a general upward trend, but Student Z studied 4 hours and scored 95, while Student Y studied 4.5 hours and scored 88. Based on this scatter plot, can you conclude that studying exactly 4 hours guarantees a score of 95?



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5)

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%

6) A jar contains colored balls: Red, Blue, and Green. A marble is drawn, replaced, and then a second marble is drawn. Which statement about this compound experiment is FALSE?

- ☐ A. With replacement, the second draw has the same outcomes as the first
☐ B. The total sample space has 9 outcomes
☐ C. The probability of drawing Blue on both draws is $\frac{2}{9}$
☐ D. Without replacement, there would be fewer total outcomes

7) A student has a $\frac{2}{3}$ probability of passing math and a $\frac{3}{4}$ probability of passing history. Assuming independence, what is the probability of passing EXACTLY ONE of these two subjects?

- ☐ A. $\frac{1}{2}$ ☐ C. $\frac{7}{12}$
☐ B. $\frac{5}{12}$ ☐ D. $\frac{11}{12}$



- 1) A scientist measures plant stem diameters (mm) and displays them in a stem-and-leaf plot:

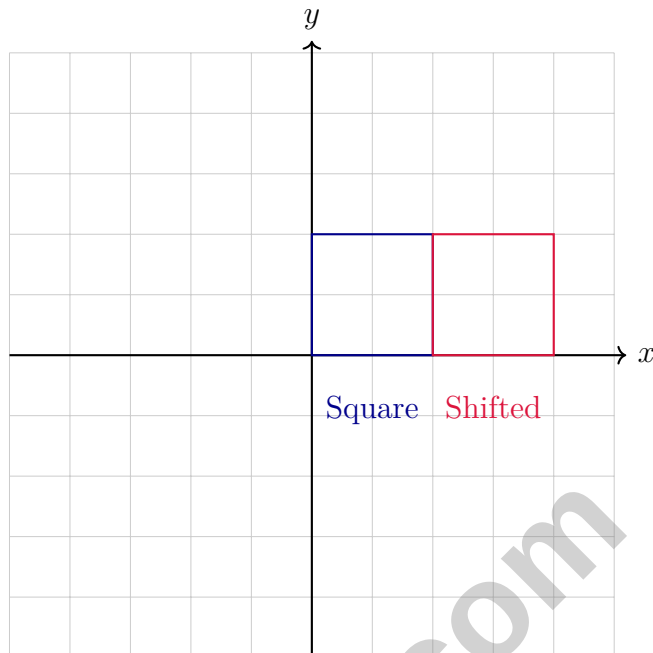
Stem	Leaves
1	4, 7
2	1, 5, 8
3	2, 4, 6, 9

The lower quartile (Q1) falls between which two values?

- ☐ A. 17 and 21 ☐ C. 25 and 28
☐ B. 21 and 25 ☐ D. 28 and 32
- 2) A rectangular building is shown on a site plan as 7 inches by 11 inches at a scale of 1 in : 20 ft. Which statement correctly describes the actual building?
- ☐ A. The length is 140 ft and width is 220 ft ☐ C. The length is 35 ft and width is 55 ft
☐ B. The length is 220 ft and width is 140 ft ☐ D. The length is 55 ft and width is 35 ft



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3)

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. $(-2, 0)$

4) In a blueprint, a scale of 1 inch = 10 feet is used. A room on the blueprint is 2.5 inches by 3 inches. What are the actual dimensions?

☐ A. 2.5 ft by 3 ft☐ C. 25 ft by 30 ft☐ B. 20 ft by 30 ft☐ D. 50 ft by 60 ft

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 B is correct.** (7.NS.1-7.NS.3) Divide the magnitudes: $13 \div 4 = 3.25$. Apply sign rule: $(+) \div (-) = (-)$. Thus $13 \div (-4) = -3.25$.
- 2) **Choice D is correct.** (7.RP.3) Flowers: $\frac{25}{100} \times 72 = 18$. Vegetables: $72 - 18 = 54$.
- 3) **Choice B is correct.** (7.EE.4a) Activation fee is \$29.99 plus \$9.99 per month. Formula: $C = 9.99n + 29.99$.
- 4) **The correct answer is 12.** (7.G.1-7.G.5) Area ratio 4 : 9 gives linear scale factor $\sqrt{4} : \sqrt{9} = 2 : 3$. Larger base = $8 \times \frac{3}{2} = 12$ cm.
- 5) **Choice B is correct.** (7.SP.1-7.SP.4) By only surveying Thursday morning customers, the sample is limited to that specific group. This is the actual population being sampled, even if it's not the bakery's intended population.
- 6) **Choice B is correct.** (7.G.4-7.G.6) The correct volume formula is $V = \pi r^2 h = 3.14 \times 3^2 \times 4 = 3.14 \times 9 \times 4 = 113.04$ m³. The student's incorrect formula gives $2\pi rh = 2(3.14)(3)(4) = 75.36$ m³ (which is the lateral area formula).
- 7) **Choice B is correct.** (7.SP.1-7.SP.4) If sleep is 33% = 8 hours, then the total day is $\frac{8}{0.33} \approx 24$ hours. School is 25% of 24 = $0.25 \times 24 = 6$ hours.
- 8) **Choice C is correct.** (7.SP.5-7.SP.8) Non-red: $10 + 8 = 18$. $P(\text{not red}) = \frac{18}{30} = \frac{3}{5}$.
- 9) **Choice B is correct.** (7.SP.1-7.SP.4) Dataset 1 ranges 10–30 (range = 20). Dataset 2 ranges 15–25 (range = 10). Dataset 2 has lower variability and is more compact around the median.
- 10) **Choice D is correct.** (7.SP.5-7.SP.8) Each of the 2 shapes branches into 3 color outcomes. Total: $2 \times 3 = 6$ final branches.
- 11) **Choice C is correct.** (7.SP.5-7.SP.8) $P(3) \cdot P(5) = \frac{1}{6} \cdot \frac{1}{6} = \frac{1}{36}$ for independent events.
- 12) **Choice C is correct.** (7.SP.6) Pizza: 84 students; Pasta: 48 students. Combined: $84 + 48 = 132$ out of 240 total.
- 13) **Choice B is correct.** (7.SP.1-7.SP.4) Stem 2 with leaves 3, 5, 7 represents 23, 25, 27, not 3, 5, 7.
- 14) **Choice A is correct.** (7.SP.5-7.SP.8) An event and its complement sum to 1. Here, $\frac{2}{3} + \frac{1}{3} = \frac{3}{3} = 1$, so both probabilities are correct.
- 15) **Choice B is correct.** (7.SP.1-7.SP.4) $\frac{45}{120} = \frac{x}{840}$. Reduce to $\frac{3}{8} = \frac{x}{840} \Rightarrow x = 315$.
- 16) **Choice D is correct.** (7.RP.3) Percent error = $\frac{|1.2 - 1.5|}{1.5} \times 100\% = \frac{0.3}{1.5} \times 100\% = 20\%$.
- 17) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute $\frac{1}{2}$: $\frac{1}{2}(4x) + \frac{1}{2}(6) = 2x + 3$.
- 18) **Choice C is correct.** (7.RP.1-7.RP.3) Multiply the map distance by the scale factor: $3.5 \times 50 = 175$ km.
- 19) **The correct answer is B, C.** (7.G.1-7.G.5) B and C are both correct. When two lines intersect, they form two pairs of vertical angles (congruent pairs) and four pairs of supplementary adjacent angles. One angle is 73°; its vertical angle is also 73° (C). The adjacent angles are each $180 - 73 = 107^\circ$. So the four angles are: 73°, 107°, 73°, 107° (B). A is false (not all 73°). D is technically true but already covered in B.
- 20) **Choice D is correct.** (7.RP.3) $33\frac{1}{3}\% = \frac{1}{3}$; $\frac{1}{3} \times 120 = 40$.
- 21) **The correct answer is 16 m.** (7.G.4-7.G.6) $C = \pi d \Rightarrow 50.24 = 3.14d \Rightarrow d = 50.24 \div 3.14 = 16$ m.
- 22) **Choice D is correct.** (7.RP.3) Discount amount = $0.25 \times 32 = \$8$. Sale price = $32 - 8 = \$24$.
- 23) **Choice D is correct.** (7.RP.3) First scenario: $I = 2000 \times 0.04 \times 2 = \160 . Second: $I = 1000 \times 0.06 \times 2 = \120 . First produces \$160, which is \$40 more than the second.
- 24) **Choice A is correct.** (7.NS.1b) Combine step-by-step: $-5 + 9 = 4$, then $4 + (-4) = 0$. The negatives and positives cancel out.
- 25) **The correct answer is 1386.** (7.G.4-7.G.6) $A = \frac{22}{7} \times 21^2 = \frac{22}{7} \times 441 = 22 \times 63 = 1386$ cm².
- 26) **Choice A is correct.** (7.NS.1-7.NS.3) $0 - (-9) = 0 + 9 = 9$. The opposite of -9 is 9.
- 27) **Choice C is correct.** (7.EE.1-7.EE.2) Substitute: $3(2 + (-3)) = 3(-1) = -3$.
- 28) **Choice A is correct.** (7.EE.1) Combine x^2 terms and x terms: $(9 + 3)x^2 + (2 - 4)x = 12x^2 - 2x$.
- 29) **Choice A is correct.** (7.EE.1-7.EE.2) GCF of 6 and 9 is 3. Both terms contain y . GCF is $3y$.
- 30) **Choice A is correct.** (7.EE.4b) Subtract 3: $-2x < 6$. Divide by -2 and flip the sign: $x > -3$.



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Hi, Persistent Problem Solver!

◇ Some Grade 7 questions ask you to hold several ideas in your mind at once. That can feel hard, and that is exactly why practice matters. ◇

★ **Remember this:** You showed persistence by continuing through the set. That habit is powerful because difficult problems often open after one more good attempt. You practiced across 6 full Grade 7 practice tests, and that repeated effort matters. ★

Persistence Tools

- **Try a Smaller Case:** Use an easier number to see the pattern.
- **Draw It:** Make the situation visible.
- **Restate It:** Say the question in your own words.
- **Check One Step:** Fix the first unclear place.

Grade 7 test-day tip: When stuck, do not restart everything. Find the first step you trust, then rebuild from there.

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

Jay Daie

Your Persistence Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **6** 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:

6 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.



Improve Understanding

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



Test Confidence

Familiarize with test formats and improve accuracy and speed.



Boost 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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