

7 Colorado CMAS

Grade 7 Math Practice Tests



7 PRINTED TESTS + 2 ONLINE TESTS

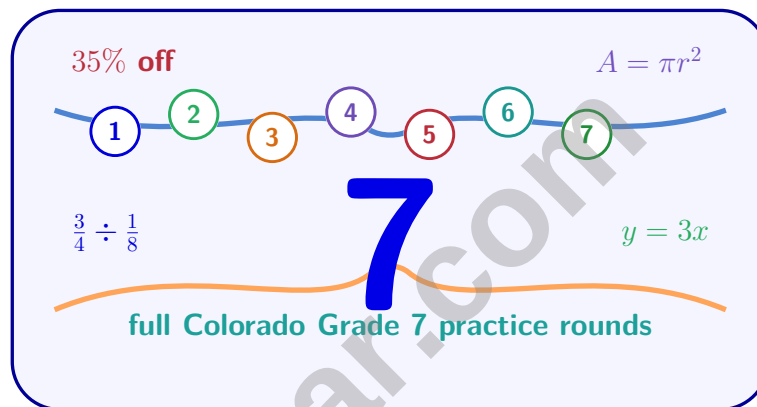


**Standards Aligned Problem Solving
For Comprehensive Assessment Programs**



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 seven 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, 280 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.

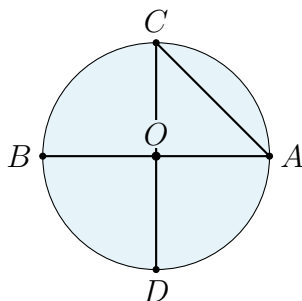


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Table of Contents

★ Practice Test 1	_____	14
★ Practice Test 2	_____	29
★ Practice Test 3	_____	44
★ Practice Test 4	_____	58
★ Practice Test 5	_____	72
★ Practice Test 6	_____	86
★ Practice Test 7	_____	100
Practice Test Answer Keys	_____	116
Practice Test Answers and Explanations	_____	121

- 1) In the circle below, how many chords are shown?



- ☐ A. 1 ☐ C. 3
☐ B. 2 ☐ D. 4
- 2) A server at a restaurant receives a total of \$18 in tips on a \$120 bill. What percentage tip did the customer leave?
- ☐ A. 12% ☐ C. 18%
☐ B. 20% ☐ D. 15%
- 3) An elevator descends 2.5 floors per second for 3 seconds. What is the net change in floors?
- ☐ A. -0.5 floors ☐ C. -7.5 floors
☐ B. -5.5 floors ☐ D. 5.5 floors
- 4) A proportional relationship has an equation $y = 2.2x$. What is the value of y when $x = 5$?



5) Two triangles have sides (3, 4, 5) and (3, 4, 5), respectively. Can we conclude they are congruent?

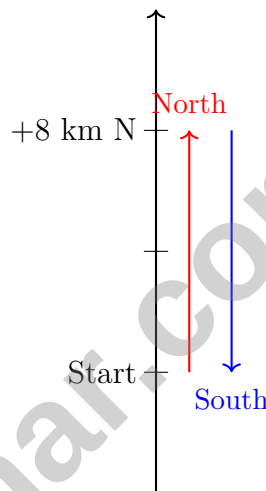
☐ A. No, they are only similar

☐ C. Yes, by SAS

☐ B. Yes, by SSS

☐ D. No, we need angle measures

6) A scout hikes 8 kilometers north, then 8 kilometers south. Using a signed number model where north is positive, what is the total displacement?



☐ A. 16 km north

☐ C. 0 km (back at start)

☐ B. 8 km north

☐ D. 8 km south

7) Which expression uses the associative property to group the two negative addends first?

☐ A. $-6 + 13 + (-7)$

☐ C. $13 + (-6) + (-7)$

☐ B. $(-6 + (-7)) + 13$

☐ D. $(13 + (-6)) + (-7)$



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8) To design a simulation for the probability that a student passes a course (estimated at 75%), which spinner is most appropriate?

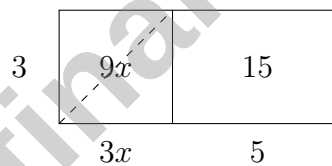
- ☐ A. A spinner with 2 equal sections ☐ C. A spinner with 4 equal sections, 3 shaded
☐ B. A spinner with 3 equal sections, one shaded ☐ D. A spinner with 4 equal sections, 1 shaded

9) Evaluate $\frac{m}{2} + 6$ when $m = 10$.

- ☐ A. 8 ☐ C. 16
☐ B. 26 ☐ D. 11

10) Simplify: $8x + 5y - 3x - 2y + x$

- ☐ A. $6x + 3y$ ☐ C. $4x + 3y$
☐ B. $12x + 3y$ ☐ D. $8x + 5y$



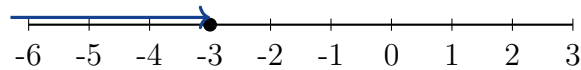
11)

The area model above represents the factorization of $9x + 15$. What is the common factor shown as the height?

- ☐ A. 3 ☐ C. 9
☐ B. 5 ☐ D. 15



- 1) Graph the inequality $y \leq -3$ on a number line.



- ☐ A. Closed circle at -3 pointing left ☐ C. Closed circle at -3 pointing right
☐ B. Open circle at -3 pointing left ☐ D. Open circle at -3 pointing right
- 2) A histogram displays the number of plants in gardens across two neighborhoods. North Side: concentrated at 15–25 plants. South Side: concentrated at 25–35 plants. Both neighborhoods show similar spread. What inference can be made?
- ☐ A. South Side gardens have approximately 10 more plants on average
☐ B. North Side is better for gardening
☐ C. Both neighborhoods have identical gardens
☐ D. Gardening is equally popular in both areas
- 3) A teacher records reading test scores in a stem-and-leaf plot but forgets to order the leaves. The plot shows: Stem 8 with leaves 5, 2, 7, 2. What should the ordered leaves be?
- ☐ A. 5, 2, 7, 2 ☐ C. 2, 5, 7, 2
☐ B. 2, 2, 5, 7 ☐ D. 7, 5, 2, 2
- 4) A composite shape is formed by placing a right triangle (legs 5 cm and 12 cm) next to a 12 cm $\times$ 5 cm rectangle. What is the total area?
- ☐ A. 30 cm² ☐ C. 90 cm²
☐ B. 60 cm² ☐ D. 150 cm²



- 5) A temperature drops 45°F over 9 hours. What is the average drop per hour?

- 6) A trapezoidal prism has a trapezoidal base with parallel sides 4 cm and 6 cm and a height of 3 cm (height of the trapezoid). The depth of the prism is 10 cm. What is the volume? (Area of trapezoid = $\frac{1}{2}(b_1 + b_2) \times h$)

- ☐ A. 60 cm^3 ☐ C. 150 cm^3
☐ B. 75 cm^3 ☐ D. 300 cm^3

- 7) Write the decimal $0.\overline{4}$ (where 4 repeats) as a fraction.

- 8) Which probability best matches the phrase “even chance”?

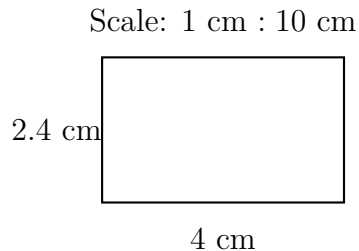
- ☐ A. 0.2 ☐ C. 0.8
☐ B. 0.5 ☐ D. 0.9

- 9) Which scenario shows the most total interest earned over 3 years with compound interest?

- ☐ A. \$2,000 at 4% ☐ C. \$2,500 at 3%
☐ B. \$1,000 at 8% ☐ D. \$1,500 at 6%



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1)

Using the scale shown, what is the perimeter of the actual rectangle?

☐ A. 12.8 cm☐ C. 128 cm☐ B. 64 cm☐ D. 256 cm

2) A recipe uses 3 tablespoons of salt for 12 cups of water. If s is salt and w is water, what equation shows this proportional relationship?

☐ A. $s = 4w$ ☐ C. $s = \frac{w}{4}$ ☐ B. $s = w + 9$ ☐ D. $s = \frac{1}{4}w$

3) Evaluate $(2^3)^2$.

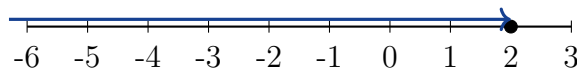
4) What is 0.45 as a percent?

☐ A. 4.5%☐ C. 0.45%☐ B. 450%☐ D. 45%

5) A clothing factory reduces its fabric waste from 500 kg to 375 kg per week through efficiency improvements. What is the percent decrease in waste?

- ☐ A. 75% ☐ C. 45%
☐ B. 33.3% ☐ D. 25%

6) What inequality is represented?



- ☐ A. $x > 2$ ☐ C. $x \geq 2$
☐ B. $x < 2$ ☐ D. $x \leq 2$

7) To estimate the probability of a biased coin landing on heads, which number of trials would give the most reliable estimate?

- ☐ A. 10 trials ☐ C. 500 trials
☐ B. 50 trials ☐ D. 1000 trials

8) Which value of x satisfies $3x - 2 \leq 10$?

- ☐ A. $x = 5$ ☐ C. $x = 8$
☐ B. $x = 4$ ☐ D. $x = 10$

9) A company has 1000 employees. To find the average salary, it surveys 100 randomly selected employees. The average salary from these 100 employees is called a:

- ☐ A. parameter ☐ C. sample statistic
☐ B. population mean ☐ D. bias measure



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Colorado Measures of Academic Success 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 Measures of Academic Success practice test.

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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice C is correct.** (7.G.4-7.G.6) The three chords are: AB (diameter), CD (diameter), and AC . Each connects two points on the circle.
- 2) **Choice D is correct.** (7.RP.3) Tip percentage = $\frac{18}{120} = 0.15 = 15\%$.
- 3) **Choice C is correct.** (7.NS.2) Descent of 2.5 floors per second: $(-2.5) \times 3 = -7.5$ floors.
- 4) **The correct answer is 11.** (7.RP.1-7.RP.3) $y = 2.2 \times 5 = 11$.
- 5) **Choice B is correct.** (7.G.1-7.G.5) Both triangles have identical side lengths: 3, 4, and 5. The SSS (Side-Side-Side) condition guarantees congruence.
- 6) **Choice C is correct.** (7.NS.1-7.NS.3) $+8$ (north) and -8 (south) are opposites. Their sum is zero: $8 + (-8) = 0$. The scout returns to the starting point.
- 7) **Choice B is correct.** (7.NS.1b) Option B groups the two negative numbers first ($-6 + (-7) = -13$), then adds the positive: $-13 + 13 = 0$. This is easier than computing left-to-right.
- 8) **Choice C is correct.** (7.SP.5-7.SP.8) $75\% = \frac{3}{4}$. A spinner with 4 equal sections where 3 are shaded represents this probability.
- 9) **Choice D is correct.** (7.EE.1-7.EE.2) Substitute: $\frac{10}{2} + 6 = 5 + 6 = 11$.
- 10) **Choice A is correct.** (7.EE.1) Combine: $(8 - 3 + 1)x + (5 - 2)y = 6x + 3y$.
- 11) **Choice A is correct.** (7.EE.1-7.EE.2) The rectangle has length $3x + 5$ and area $9x + 15$. Height must be 3, which is the GCF.
- 12) **Choice B is correct.** (7.EE.4b) $x \geq -1$ includes -1 (filled circle) and all values greater than -1 (arrow right).
- 13) **Choice A is correct.** (7.G.4-7.G.6) If $SA = 6s^2 = 150$, then $s^2 = 25$, so $s = 5$ cm.
- 14) **Choice C is correct.** (7.SP.1-7.SP.4) Asking every 10th visitor is systematic random sampling. Since the pattern (every 10th) doesn't depend on characteristics of individual visitors, it provides a representative, unbiased sample of all museum visitors.
- 15) **The correct answer is \$51.** (7.RP.3) Discount amount = $0.32 \times 75 = \$24$. Sale price = $75 - 24 = \$51$.
- 16) **Choice B is correct.** (7.NS.1-7.NS.3) Sign rule: negative divided by positive always gives negative.
- 17) **Choice A is correct.** (7.NS.2d) $0.75 = \frac{75}{100}$. Find $\text{GCD}(75, 100) = 25$. Divide both: $\frac{75 \div 25}{100 \div 25} = \frac{3}{4}$. A is the simplified form.
- 18) **Choice A is correct.** (7.NS.1-7.NS.3) $2.75 \times 10^{-6} = 0.00000275$. Move decimal 6 places left.
- 19) **The correct answer is A, C.** (7.RP.3) Choice A: $50\% = \frac{1}{2}$. Choice B: $75\% = \frac{3}{4}$, not $\frac{2}{3}$. Choice C: $\frac{3}{4} = 0.75 = 75\%$. Choice D is false because $\frac{1}{5} = 20\%$, not 25% .
- 20) **Choice A is correct.** (7.EE.1-7.EE.2) Divide coefficients: $12 \div 4 = 3$. Apply quotient rule: $p^{11} \div p^6 = p^{11-6} = p^5$. Result: $3p^5$.
- 21) **Choice D is correct.** (7.G.1-7.G.5) A plane passing through opposite corners of a rectangular prism can intersect at most 5 faces, producing at most a pentagon. A hexagon would require intersecting all 6 faces, which this type of cut cannot do.
- 22) **The correct answer is 2.** (7.RP.3) $180 = 1500 \times 0.06 \times t \Rightarrow 180 = 90t \Rightarrow t = 2$ years.
- 23) **Choice A is correct.** (7.G.4-7.G.6) From $50.24 = 3.14 \times r^2$, we get $r^2 = 16$, so $r = 4$ meters.
- 24) **Choice A is correct.** (7.G.4-7.G.6) $157 = 2(3.14)(r)(10) \Rightarrow 157 = 62.8r \Rightarrow r = 2.5$ cm.
- 25) **Choice A is correct.** (7.SP.1-7.SP.4) Product X: mean 2.5%, IQR 1.0% (tight middle spread, consistent control). Product Y: mean 2.3%, IQR 2.5% (wider spread, less predictable). For quality control, consistency (smaller IQR) matters more than a 0.2% mean advantage.
- 26) **Choice C is correct.** (7.SP.1-7.SP.4) The 30–40 interval has a frequency of 7, which is higher than 4, 6, or 3.
- 27) **Choice A is correct.** (7.SP.5-7.SP.8) Blue or red: $\frac{4}{8}$. Not blue or red: $1 - \frac{4}{8} = \frac{4}{8} = \frac{1}{2}$.
- 28) **Choice C is correct.** (7.NS.1-7.NS.3) Subtracting a negative is adding the opposite: $-4 - (-6) = -4 + 6 = 2$.
- 29) **Choice B is correct.** (7.NS.1-7.NS.3) Improvement of $2.4 \text{ sec/month} \times 3 \text{ months} = 7.2$ seconds total.



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Hi, Progress Maker!

◇ You have done more than complete a set of tests. You have rehearsed the habits that make Grade 7 math feel less surprising. ◇

★ **Remember this:** Progress is not always loud. Sometimes it looks like fewer careless errors, clearer work, better pacing, and more confidence when a problem is unfamiliar. You practiced across 7 full Grade 7 practice tests, and that repeated effort matters. ★

Signs of Growth

- **Clear Work:** Your steps are easier to follow.
- **Better Pacing:** You know when to move on and return.
- **Stronger Checks:** You catch mistakes earlier.
- **Calmer Thinking:** You know what to try next.

Grade 7 test-day tip: Keep one short list of mistakes you often make, then check that list before each practice session.

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

Jay Daie

Your Growth Coach

Practice Today. Succeed Tomorrow!

This book includes **7** 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:

7 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!



PRACTICE
REGULARLY



STAY
FOCUSED



SOLVE
CONFIDENTLY



SUCCEED
BRIGHTLY



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