

9 Minnesota

MCA III

GRADE 7

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

Program



9 PRINTED TESTS



2 ONLINE TESTS



Use these two additional online practice tests
for **extra review** after the printed tests in this book.



BUILT FOR ACAP
Standards-Aligned



**STRENGTHEN
SKILLS**



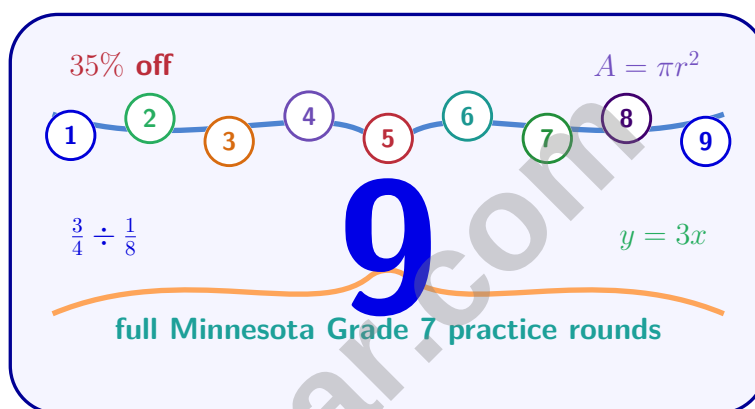
**SHARPEN
THINKING**



BE TEST-READY
Improve Performance

9 Minnesota MCA III Grade 7 Math Practice Tests

Standards-Aligned Minnesota Practice for Proportional Reasoning, Expressions, Geometry, Statistics, and Probability



Nine complete 40-question Grade 7 MCA III 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, Minnesota Grade 7 Problem Solver!

Nine focused rounds for sharper MCA III math thinking

This book gives you nine full Grade 7 MCA III 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 Minnesota 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 nine-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.

Minnesota 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?

Nine MCA III tests, 360 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 7–9	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 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. $\frac{1}{2}$
☐ B. $\frac{5}{12}$

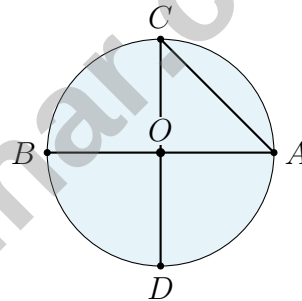
☐ C. $\frac{7}{12}$
☐ D. $\frac{11}{12}$

- 2) A music lesson teacher charges \$35 per half-hour lesson. A student takes 8 lessons and tips the teacher 15% of the total cost. How much does the student pay including the tip?

☐ A. \$280
☐ B. \$380

☐ C. \$336
☐ D. \$322

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



☐ A. 1
☐ B. 2

☐ C. 3
☐ D. 4

- 4) Which probability represents an “unlikely” event?

☐ A. 0.05
☐ B. 0.5

☐ C. 0.95
☐ D. 0.99



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- 5) A photo is 8 inches wide and 6 inches tall. It is enlarged by a scale factor of 2.5. What are the new dimensions?
- ☐ A. 5.5 inches $\times$ 3.5 inches ☐ C. 16 inches $\times$ 12 inches
☐ B. 10 inches $\times$ 8 inches ☐ D. 20 inches $\times$ 15 inches
- 6) A store marks down a \$85 item by 12%. What is the sale price?
- ☐ A. \$80.00 ☐ C. \$76.40
☐ B. \$75.20 ☐ D. \$74.80
- 7) A toy originally costs \$16. It is on sale for \$12. What is the percent discount?
- ☐ A. 33% ☐ C. 20%
☐ B. 75% ☐ D. 25%
- 8) What is $-8 + 5$?
- ☐ A. -13 ☐ C. 3
☐ B. 13 ☐ D. -3
- 9) Evaluate $7 - 3x$ when $x = -2$.
- ☐ A. 1 ☐ C. -6
☐ B. 13 ☐ D. 10
- 10) A student claims that $\frac{7}{10}$ mile in $\frac{1}{5}$ hour equals $\frac{7}{50}$ mph. What is the student's error?
- ☐ A. Multiplied fractions directly instead of flipping and multiplying ☐ C. Forgot to simplify the final answer
☐ B. Forgot to flip the numerator ☐ D. Did not flip the fraction in the denominator before multiplying



- 11) A swimming pool fills at a constant rate. The table shows gallons of water at different times. Identify the y/x column that confirms proportionality.

Time (min)	3	6	9
Gallons	75	150	225
y/x	25	25	25

What is the unit rate?

- ☐ A. 75 gallons per minute ☐ C. 3 gallons per minute
☐ B. 25 minutes per gallon ☐ D. 25 gallons per minute
- 12) A production line manufactures toys at a constant rate. After 8 hours, 240 toys are made; after 11 hours, 330 toys are made. Does this represent a proportional relationship?
- ☐ A. No, because $330 - 240 \neq 11 - 8$. ☐ D. Yes, because $\frac{240}{8} = \frac{330}{11} = 30$ toys per hour.
☐ B. No, because the hours are different.
☐ C. Yes, because both involve positive numbers.
- 13) Which proportion is equivalent to “Find 38% of 210”?
- ☐ A. $\frac{38}{210} = \frac{100}{x}$ ☐ C. $\frac{x}{210} = \frac{100}{38}$
☐ B. $\frac{210}{100} = \frac{x}{38}$ ☐ D. $\frac{38}{100} = \frac{x}{210}$
- 14) A spinner has 8 equal sections. If it is spun 240 times, approximately how many times would you expect one specific section to appear?



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1) What is the exponent when 8.9 is used as the coefficient in scientific notation for 8,900,000,000?

☐ A. 8

☐ C. 10

☐ B. 9

☐ D. 11

2) A printer produces $\frac{2}{3}$ ream of paper in $\frac{1}{4}$ hour. How many reams can it produce in 3 hours?

☐ A. 6 reams

☐ C. 2 reams

☐ B. $\frac{2}{3}$ reams

☐ D. 8 reams

3) Two quantities are shown below. Which represents a non-proportional relationship?

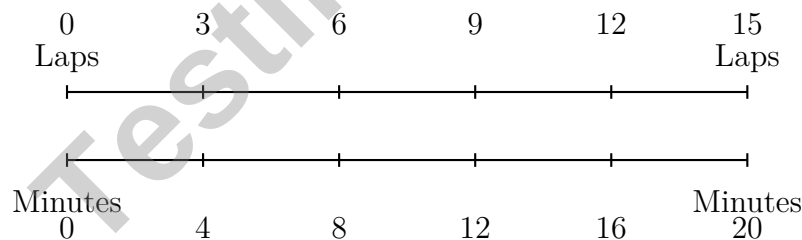
☐ A. Number of hours worked at hourly wage and earnings

☐ C. The number of items bought at constant price and total cost

☐ B. The side of a square and its area

☐ D. A person's age and height (within normal range)

4) A double number line relates laps completed to minutes elapsed.



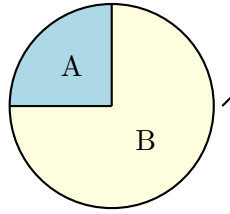
What is the constant of proportionality (laps per minute)?

☐ A. 1.2 laps/min

☐ C. 1.0 laps/min

☐ B. 0.6 laps/min

☐ D. 0.75 laps/min

5)

A spinner with sections A and B is spun twice. What is the total number of outcomes in the sample space?

☐ A. 2☐ C. 4☐ B. 3☐ D. 8

6) A freezer must stay at most -5°C to preserve food. If the current temperature is -2°C , by how many degrees must it drop?

☐ A. $d \geq 3$ ☐ C. $d \geq -3$ ☐ B. $d \leq -3$ ☐ D. $d < -7$

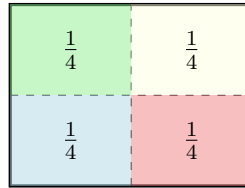
7) A square pyramid has a square base with side 5 cm and slant height 6.5 cm. Find the total surface area.

☐ A. 25 cm^2 ☐ C. 90 cm^2 ☐ B. 50 cm^2 ☐ D. 115 cm^2

8) 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

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1)

A rectangular area model shows four equal regions. Is this a uniform probability model?

- ☐ A. No, the model does not sum to 1. ☐ D. Yes, but only if we add more regions.
☐ B. No, regions have different areas.
☐ C. Yes, each region has probability $\frac{1}{4}$.

2) Solve for x : $6(x + 2) = 30$

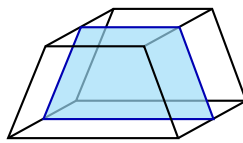
- ☐ A. $x = 1$
☐ C. $x = 5$
☐ B. $x = 3$
☐ D. $x = 7$

3) Solve: $\frac{1}{3}x - 2 = 4$

- ☐ A. $x = 6$
☐ C. $x = 18$
- ☐ B. $x = 12$
☐ D. $x = 24$

4) A square in a scale drawing has a side length of 2 cm. The scale is 1 cm : 3 m. What is the area of the actual square in square meters?

- ☐ A. 9 m²
☐ C. 36 m²
- ☐ B. 12 m²
☐ D. 72 m²



trapezoid slice

5)

A trapezoidal prism is sliced horizontally by a plane parallel to the trapezoidal bases. What is the shape of the cross-section?

- ☐ A. Triangle ☐ C. Rectangle
☐ B. Trapezoid ☐ D. Pentagon

6) Two complementary angles have measures in the ratio 2 : 3. What is the measure of the larger angle?

- ☐ A. 54° ☐ C. 45°
☐ B. 36° ☐ D. 30°

7) A model rocket is 24 inches tall. The actual rocket is 60 feet tall. What is the scale factor of the model?

- ☐ A. 1 : 10 ☐ C. 1 : 60
☐ B. 1 : 30 ☐ D. 1 : 120

8) A circle has a radius of 5 meters. Approximately, what is its circumference? Use $\pi \approx 3.14$.

- ☐ A. 15.7 m ☐ C. 31.4 m
☐ B. 25 m ☐ D. 78.5 m



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Minnesota MCA III 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 Minnesota MCA III practice test.



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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice B is correct.** (7.SP.5-7.SP.8) Pass math AND fail history: $\frac{2}{3} \cdot \frac{1}{4} = \frac{2}{12}$. Fail math AND pass history: $\frac{1}{3} \cdot \frac{3}{4} = \frac{3}{12}$. Total: $\frac{2}{12} + \frac{3}{12} = \frac{5}{12}$.
- 2) **Choice D is correct.** (7.RP.3) Total lesson cost = $35 \times 8 = \$280$. Tip = $0.15 \times 280 = \$42$. Total paid = $280 + 42 = \$322$.
- 3) **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.
- 4) **Choice A is correct.** (7.SP.5-7.SP.8) A very small probability (close to 0) means the event is unlikely. 0.05 is the smallest value.
- 5) **Choice D is correct.** (7.RP.1-7.RP.3) Multiply each dimension by the scale factor: $8 \times 2.5 = 20$ inches; $6 \times 2.5 = 15$ inches.
- 6) **Choice D is correct.** (7.RP.3) The discount is 12% of $\$85 = 0.12 \times 85 = 10.20$ dollars. Sale price: $85 - 10.20 = 74.80$ dollars.
- 7) **Choice D is correct.** (7.RP.3) Discount amount = $16 - 12 = \$4$. Percent = $\frac{4}{16} \times 100 = 25\%$.
- 8) **Choice D is correct.** (7.NS.1b) Start at -8 on a number line and move 5 units right: $-8 + 5 = -3$.
- 9) **Choice B is correct.** (7.EE.1-7.EE.2) Substitute: $7 - 3(-2) = 7 + 6 = 13$.
- 10) **Choice D is correct.** (7.RP.1-7.RP.3) Correct: $\frac{7/10}{1/5} = \frac{7}{10} \times \frac{5}{1} = \frac{35}{10} = \frac{7}{2} = 3.5$ mph. The student multiplied $\frac{7}{10} \times \frac{1}{5} = \frac{7}{50}$ mph, forgetting to reciprocal the divisor fraction.
- 11) **Choice D is correct.** (7.RP.1-7.RP.3) The constant ratio $y/x = 25$ means 25 gallons per minute (the unit rate).
- 12) **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 $k = 30$.
- 13) **Choice D is correct.** (7.RP.3) To find 38% of 210, set percent over 100 equal to part over whole: $\frac{38}{100} = \frac{x}{210}$. Cross-multiply: $x \approx 80$.
- 14) **The correct answer is 30.** (7.SP.5-7.SP.8) Each section has theoretical probability $\frac{1}{8}$. Expected frequency: $\frac{1}{8} \times 240 = 30$ times.
- 15) **Choice C is correct.** (7.RP.3) Year 1: $\$1,000 \times 1.05 = \$1,050$. Year 2: $\$1,050 \times 1.05 = \$1,102.50$. Option A is simple interest for 1 year; B and D are incorrect calculations.
- 16) **Choice B is correct.** (7.EE.3-7.EE.4) Speed = $\frac{\text{distance}}{\text{time}} = \frac{240}{4} = 60$ mph. Reasonableness check: $60 \text{ mph} \times 4 \text{ hours} = 240 \text{ miles}$ ✓. Estimate: 240 is close to 250; $250 \div 5 \approx 50$, so 60 is reasonable.
- 17) **Choice A is correct.** (7.G.1-7.G.5) Let angles be $2k$ and $7k$. Then $2k + 7k = 180^\circ$, so $9k = 180^\circ$ and $k = 20^\circ$. Supplement is $7(20) = 140^\circ$.
- 18) **The correct answer is A,D.** (7.G.4-7.G.6) A is correct because $V = Bh$, so $h = V/B$. D is correct because volume is measured in cubic units. B is false because $2 \times 3 \times 5 = 30 \text{ m}^3$, not 10 m^3 . C is false because the base shape affects the base area.
- 19) **Choice B is correct.** (7.G.1-7.G.5) Scale factor = $\frac{9}{6} = 1.5$. Perimeter of larger = $18 \times 1.5 = 27 \text{ cm}$.
- 20) **Choice B is correct.** (7.NS.1-7.NS.3) $-5 + 12 = 7^\circ\text{C}$.
- 21) **Choice C is correct.** (7.NS.1-7.NS.3) Area of a square = $s^2 = 8^2 = 64 \text{ cm}^2$.
- 22) **Choice A is correct.** (7.EE.1-7.EE.2) Subtract: $(3x + 5) - (2x - 1) = 3x + 5 - 2x + 1 = x + 6$ miles farther.
- 23) **Choice A is correct.** (7.EE.4a) Repair fee is $\$40$ plus $\$8$ per item. Equation: $8i + 40 = 120$.
- 24) **Choice A is correct.** (7.G.1-7.G.5) The translation is: $(3, 2) + (-3, -2) = (0, 0)$.
- 25) **Choice C is correct.** (7.SP.1-7.SP.4) IQR = $Q3 - Q1$. For Class X: $90 - 75 = 15$. For Class Y: $88 - 80 = 8$. A smaller IQR indicates more consistency in the middle 50% of scores.
- 26) **Choice C is correct.** (7.NS.2) Positive times positive equals positive. $5 \times 4 = 20$.
- 27) **Choice B is correct.** (7.SP.1-7.SP.4) Ordering leaves helps quickly locate the median and identify patterns in the data distribution.
- 28) **The correct answer is 35.** (7.RP.1-7.RP.3) Ratio 2 : 5: if juice = 14, then $\frac{2}{5} = \frac{14}{x}$. Cross multiply: $2x = 70$, so $x = 35$ cups water.



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Hi, Confident Learner!

◇ This high-stamina book gave you nine substantial Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. Grade 7 math can feel big because it brings together rational numbers, expressions, equations, geometry, probability, and data. ◇

★ **Remember this:** But big topics become manageable when you practice one skill at a time. That is what you have been doing with every test in this book. ★

Confidence Builders

- **Know the Goal:** Identify what the question asks.
- **Use Vocabulary:** Math words point to math actions.
- **Show Work:** Give yourself something to check.
- **Celebrate Effort:** Practice is proof that you are moving.

Grade 7 test-day tip: When reviewing, do not only mark wrong answers. Write one sentence about what you learned from each one.

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

Jay Daie

Your Confidence Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **9** 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:

9 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!

Don't lose it—your extra practice and success start here!



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