

# 5

# Minnesota MCA III

## GRADE 6 MATH

# PRACTICE TESTS

Standards Aligned Problem Solving  
For Comprehensive Assessment Programs



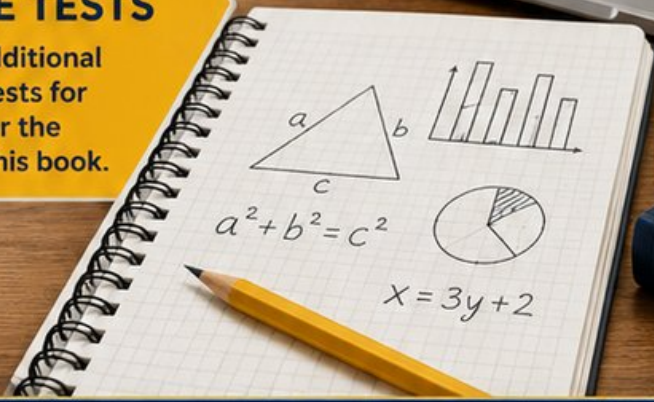
### 5 PRINTED TESTS

- ✓ Full-Length Practice Tests
- ✓ Realistic Questions
- ✓ Answer Key & Explanations



### + 2 ONLINE TESTS

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



PREPARE • PRACTICE • SUCCEED



# 5 Minnesota MCA-III Grade 6 Math Practice Tests

*Standards-Aligned North Star Review Habits for Minnesota Comprehensive Assessments*

$436 + 289$   $A = 24$

1 2 3 4 5 6 7 8

$5 \times 8$   $\frac{5}{6}$

complete Minnesota practice rounds

Five complete 40-question Grade 6 practice rounds for MCA-III, built for North Star review habits with ratios, rational numbers, expressions, equations, geometry, statistics, answer keys, and clear explanations for every item.

**Jay Daie and Reza Nazari**



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# Welcome, Minnesota Math Explorer!

Eight focused rounds using North Star review habits

This book gives you five full Grade 6 practice tests for MCA-III. Each round uses lakeside paths, winter focus, and clear data reading as a fresh mental backdrop while you read closely, choose a smart strategy, show your work, and check whether your answer makes sense.

## Your Minnesota Practice Promise

Use the problem as your compass: note what is asked, solve in order, and verify the units.

Read

Plan

Check

## How to Use This Book

A five-session routine for North Star review habits

1. **Work in order.** Take one 40-question test at a time in a quiet place.
2. **Preview the skills.** Scan the quick review pages before beginning the first round.
3. **Correct actively.** Retry missed items before reading the full explanation.
4. **Mark confidence.** Put a small star beside problems where your plan felt strong.
5. **Plan the next round.** Use the growth log to choose one habit and one skill to practice.

**Minnesota review rhythm:** Take one test, review the cold spots, and warm up the next round with targeted practice.



## What Is Inside?

Eight MCA-III tests, 320 questions, and a full review path

Part	What You Will Practice
Tests 1–2	Foundation rounds for ratios, rational numbers, operations, and careful reading.
Tests 3–4	Skill-building rounds with expressions, equations, geometry, data, and problem models.
Test 5	Final stamina round for mixed review, neat work, and flexible strategy choices.
Answer Pages	Compact keys and explanations that show why each answer works.

The tests are mixed on purpose. North star review habits means recognizing the skill even when the next question changes topic, changes format, or asks for an explanation.



Scan me!  
For more practice  
& answers

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1) A small box is 7 cm long, 3 cm wide, and 2 cm tall. What is its volume?

A. 12 cm<sup>3</sup>

C. 28 cm<sup>3</sup>

B. 21 cm<sup>3</sup>

D. 42 cm<sup>3</sup>

2) A bag contains 9 marbles. If the probability of drawing a green marble is  $\frac{1}{3}$ , how many green marbles are in the bag?

3) From the table above, what percent of the budget is food?

A. 15%

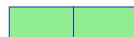
C. 25%

B. 20%

D. 30%

4) The diagram shows a ratio bar for juice boxes.

Orange juice



Apple juice

Each box represents 1 unit.

What is the ratio of orange juice boxes to apple juice boxes?

A. 2 : 3

C. 1 : 3

B. 3 : 1

D. 3 : 2

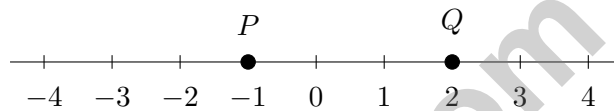


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- 5) Three phone plans offer different rates: Plan A: 500 minutes for \$35, Plan B: 800 minutes for \$50, Plan C: 1000 minutes for \$60. Which plan has the lowest cost per minute?

Plan	Minutes	Cost (\$)	Cost per Min
A	500	35	\$0.07
B	800	50	\$0.0625
C	1000	60	\$0.06

- A. Plan A (\$0.07 per min)                       C. Plan C (\$0.06 per min)  
 B. Plan B (\$0.0625 per min)                 D. Plans B and C are tied



6)

What is the relationship between points  $P$  and  $Q$ ?

- A.  $P > Q$      C.  $P = Q$   
 B.  $P$  is 3 units greater                               D.  $P < Q$
- 7) What is the perimeter of a square with vertices at  $(0, 0)$ ,  $(4, 0)$ ,  $(4, 4)$ , and  $(0, 4)$ ?
- A. 8 units     C. 16 units  
 B. 12 units     D. 20 units
- 8) A lemonade stand sells lemonade and iced tea in a ratio of 3 : 2. If the stand sells 18 cups of lemonade, how many cups of iced tea does it sell?
- A. 6 cups     C. 27 cups  
 B. 30 cups     D. 12 cups

9) A package of 15 pens costs \$4.50. What is the unit price per pen?

A. \$0.20 per pen

C. \$0.30 per pen

B. \$0.25 per pen

D. \$0.40 per pen

10) A recipe uses 3 cups of flour to make 12 cookies. How much flour is needed per cookie?

A. 0.25 cups

C. 1 cup

B. 0.75 cups

D. 4 cups

11) A swimming pool needs chlorine. The ratio of chlorine to water is 2 to 50. Complete the table:

Chlorine (oz)	Water (gal)
2	50
4	100
6	?

A. 120

C. 180

B. 150

D. 200

12) A vehicle travels at a constant speed. The graph shows the relationship between time and distance. If the point (2, 110) is on the line (meaning 2 hours → 110 miles), which equation models this relationship?

A.  $d = 50t$

C.  $d = 110t$

B.  $d = 55t$

D.  $d = 220t$



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1) A cyclist travels at 15 miles per hour. Which equation represents the distance  $d$  (in miles) after  $t$  hours?

A.  $d = 15t$

C.  $t = 15d$

B.  $d = 15 + t$

D.  $d = 15t + 1$

2) A box plot shows  $Q1 = 20$ , median = 28,  $Q3 = 35$ , min = 5, max = 50. Are there outliers?

 A. No outliers. C. Yes, the minimum is an outlier. B. Yes, the maximum is an outlier. D. Both are outliers.

3) What is  $-9 + 4$ ? using a number line



4) A spinner has 6 equal sections numbered 1, 2, 3, 4, 5, 6. What is the probability of spinning an odd number?

A.  $\frac{1}{6}$

C.  $\frac{1}{2}$

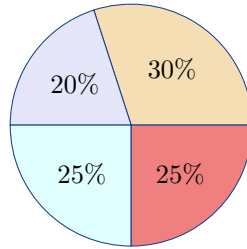
B.  $\frac{1}{3}$

D.  $\frac{2}{3}$

5) A scientist records bird counts at different altitudes. The stem-and-leaf plot uses a 2-digit stem (like 15, 16, 17). If stem 16 has leaves 0, 3, 7, what are the data values?

 A. 160, 163, 167 D. Cannot determine without the full plot B. 16, 16, 16 C. 1603, 1663, 1673

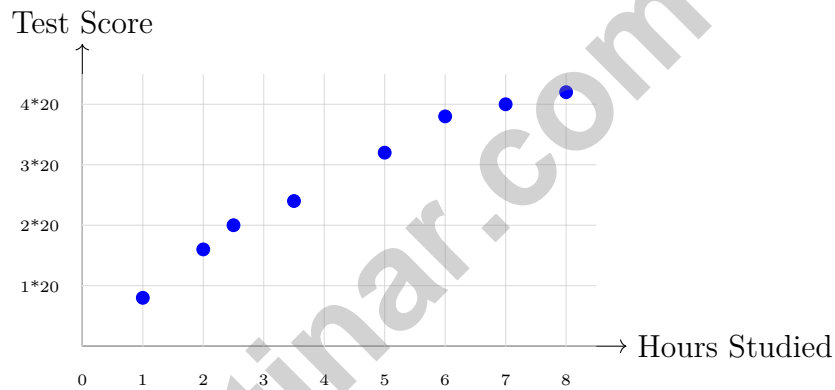
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& answers



6)

What is the central angle for the 20% section in this circle graph?

- A.  $54^\circ$
- B.  $90^\circ$
- C.  $72^\circ$
- D.  $108^\circ$



7)

This scatter plot shows the relationship between hours studied and test scores. What trend does the plot suggest?

- A. More hours studied leads to lower scores
- B. There is no relationship between study hours and scores
- C. More hours studied generally leads to higher scores
- D. All students score the same regardless of study time

1) Casey earns \$500 per month. She spends \$200 on rent and \$100 on food, then saves 38% of what is left. How much does she save?

A. \$76

C. \$102

B. \$84

D. \$120

2) The mean absolute deviation (MAD) of a data set is the average distance of each data point from the mean. For the data 5, 7, 9, the mean is 7. The distances are  $|5 - 7| = 2$ ,  $|7 - 7| = 0$ ,  $|9 - 7| = 2$ . What is the MAD?

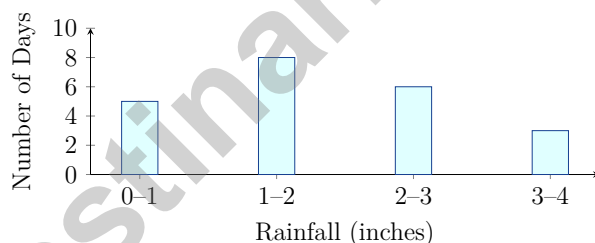
A. 0

C. 2

B.  $\frac{4}{3}$

D. 4

3) A histogram displays rainfall data with bins: 0–1 inch: 5 days; 1–2 inches: 8 days; 2–3 inches: 6 days; 3–4 inches: 3 days. What is the most common rainfall range?



A. 0–1 inch

C. 2–3 inches

B. 1–2 inches

D. 3–4 inches

4) A library tracks borrowing patterns for fiction books. The checkout times (days) for 12 books are: 5, 7, 7, 8, 9, 10, 11, 12, 14, 15, 18, 25. Which measure should the librarian use to decide the typical checkout duration?

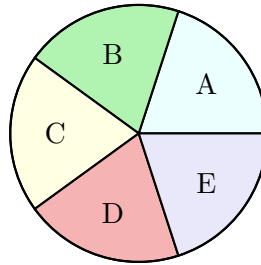
A. Mean, to include all books

D. Median, because the 25-day outlier is unrepresentative

B. Range, to see the spread

C. Mode, because most books are returned





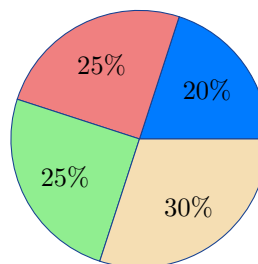
5)

A spinner has 5 equal sections labeled A, B, C, D, and E. What is the probability of spinning A?

A.  $\frac{1}{5}$   
 B.  $\frac{2}{5}$

C.  $\frac{1}{3}$   
 D.  $\frac{1}{2}$

6) A school has  $s$  students. It also has  $s + 25$  staff members. If the school has 600 students, how many staff members does it have?



7)

If the total is 200 items, how many items are in the 20% section?

A. 40  
 B. 30

C. 50  
 D. 60



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**Minnesota MCA-III Practice Test Answer Keys**

**How to use this Minnesota MCA-III answer section with a Grade 6 student:**

1. check the answer first, then write one quick reason the choice is correct
2. mark questions to try again, especially the skills that feel connected to North Star review habits
3. rework the problem before reading the full explanation, using this reminder:  
Use the problem as your compass: note what is asked, solve in order, and verify the units.

**A calm Minnesota correction routine turns every missed item into useful practice. Take one test, review the cold spots, and warm up the next round with targeted practice.**



## Minnesota Practice Test Answers and Explanations

Review the five printed MCA-III tests with clear, calm, and ready for the next signal habits.

### Practice Test 1 Answers and Explanations

- Choice D is correct. (6.3.1.1)  $V = 7 \times 3 \times 2 = 21 \times 2 = 42 \text{ cm}^3$ .
- The correct answer is 3. (6.4.1.2) Number of green marbles =  $\frac{1}{3} \times 9 = 3$ .
- Choice B is correct. (6.1.1.6) Food:  $\frac{\$400}{\$2000} = 0.20 = 20\%$ .
- Choice D is correct. (6.2.2.1) The diagram shows 3 orange boxes and 2 apple boxes. Since orange comes first, the ratio is 3 : 2.
- Choice C is correct. (6.1.2.4) Plan A:  $35 \div 500 = 0.07$  per min. Plan B:  $50 \div 800 = 0.0625$  per min. Plan C:  $60 \div 1000 = 0.06$  per min. Plan C is lowest.
- Choice D is correct. (6.1.1.1)  $P$  is at  $-1$  and  $Q$  is at  $2$ . Since  $-1 < 2$ , point  $P$  is less than point  $Q$ .
- Choice C is correct. (6.1.1.1) Side length = 4 units. Perimeter =  $4 \times 4 = 16$  units.
- Choice D is correct. (6.1.2.3) The 3 lemonade parts stand for 18 cups, so each part is  $18 \div 3 = 6$  cups. Iced tea is 2 parts, so  $2 \times 6 = 12$  cups.
- Choice C is correct. (6.1.2.3) Divide total cost by number of pens:  $4.50 \div 15 = 0.30$  dollars per pen.
- Choice A is correct. (6.1.2.4) Unit rate:  $3 \div 12 = 0.25$  cups per cookie.
- Choice B is correct. (6.1.2.1) The ratio is 2 : 50 or 1 : 25. For 6 oz of chlorine:  $6 \times 25 = 150$  gallons.
- Choice B is correct. (6.1.1.1) The unit rate (speed) is  $\frac{110 \text{ miles}}{2 \text{ hours}} = 55$  miles per hour. The equation is  $d = 55t$ , where  $d$  is distance and  $t$  is time.
- Choice C is correct. (6.1.1.3)  $\frac{15}{50} = \frac{30}{100} = 30\%$  (multiply numerator and denominator by 2).
- Choice C is correct. (6.1.3.5)  $0.80 \times \text{total} = 200$ . Total =  $200 \div 0.80 = 250$  pages.
- Choice A is correct. (6.1.2.4) Divide:  $240 \div 100 = 2.4$  meters.
- Choice D is correct. (6.3.1.1) 6% of \$2500 =  $0.06 \times 2500 = \$150$ .
- Choice C is correct. (6.2.1.2) The constant speed is  $\frac{45 \text{ miles}}{3 \text{ hours}} = 15$  mph. In 5 hours: distance =  $15 \times 5 = 75$  miles.
- Choice B is correct. (6.1.2.2) Divide:  $16 \text{ m} \div 8 \text{ cm} = 2 \text{ m per cm}$ . Scale is 1 cm = 2 m.
- The correct answer is IQR and middle 50%. (6.2.1.2) (A) IQR =  $Q3 - Q1 = 45 - 20 = 25$ . (D) By definition, the middle 50% of data falls between  $Q1$  and  $Q3$ . (B) is false because the box plot is not definitely symmetric. (C) is false because the range is  $80 - 10 = 70$ , not 75. (E) is false because  $30 - 20 = 10$  while  $45 - 30 = 15$ , showing asymmetry.
- Choice D is correct. (6.1.3.2)  $\frac{3}{4} \times \frac{8}{3} = \frac{24}{12} = 2$ .
- The correct answer is 43. (6.3.2.2) In order: 32, 35, 38, 41, 43, 46, 49, 50, 54. With 9 values (odd), the median is the 5th value: 43.
- Choice A is correct. (6.1.3.5)  $8,712 \div 12 = 726$ . The factory makes 726 light bulbs each day.
- The correct answer is 99. (6.1.1.4) 16.5% of 600 is  $0.165 \times 600 = 99$  voters.
- Choice B is correct. (6.1.3.1) Multiply:  $8 \times \$2.50 = \$20.00$ .
- Choice D is correct. (6.1.1.6) Factors of 20: 1, 2, 4, 5, 10, 20. Factors of 30: 1, 2, 3, 5, 6, 10, 15, 30. Common factors: 1, 2, 5, 10. GCF is 10.
- Choice A is correct. (6.1.1.6) Distributive property:  $12(1 + 4) = 12 \cdot 1 + 12 \cdot 4 = 12 + 48 = 60$ . Choice A shows the expanded form.
- Choice C is correct. (6.1.1.2) Opposites are numbers that are the same distance from zero but on opposite sides. 6 is 6 units right of zero, and  $-6$  is 6 units left of zero, making them opposites.
- Choice B is correct. (6.1.1.1)  $-(-6) = 6$ . The opposite of 6 is  $-6$ .



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## Author's Note

### From a Friend Who Believes in You

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#### Hi, Friend!

◇ I just want to say something important: I am proud of you. You did 5 full practice tests. That takes time, hard work, and heart. ◇

★ **Friendly truth:** a test is just one part of your math journey. You are SO much more than a score. The work you did is the real win! ★

#### What I Want You to Know

- **You are smart.** Every test you finished proves it.
- **You are brave.** You tried hard problems.
- **You are growing.** Mistakes taught you new things.
- **You are ready.** The skills are inside you.

**One more thing:** on test day, take a deep breath. Smile. Remember that someone (me!) believes in you. You can do this!

If you want to share something or ask a question, please email me at [jay@testinar.com](mailto:jay@testinar.com).

**Jay Daie**

Your Math Friend

# PRACTICE MORE. ACHIEVE MORE.

This book provides **5 full-length Math practice tests** designed to help Grade 6 students strengthen their skills, build confidence, and excel on standardized assessments.

Each test is carefully crafted to reflect the latest standards and covers a wide range of math topics with realistic questions and detailed answer explanations.



#### BUILD CONFIDENCE

Practice builds familiarity and reduces test anxiety.



#### IMPROVE ACCURACY

Sharpen skills and avoid common mistakes.



#### ACHIEVE SUCCESS

Consistent practice leads to greater results.

## WHAT'S INSIDE?



#### 5 Full-Length Practice Tests

Realistic tests designed to mirror actual exam conditions.



#### Realistic Questions

A variety of question types to strengthen problem-solving skills.



#### Answer Keys & Explanations

Detailed solutions to help students learn and improve.



#### Performance Tracking

Track progress and identify areas that need improvement.



#### Comprehensive Coverage

All essential topics aligned with Grade 6 math standards.



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