

8

Montana MAST

GRADE 6

MATH PRACTICE TESTS

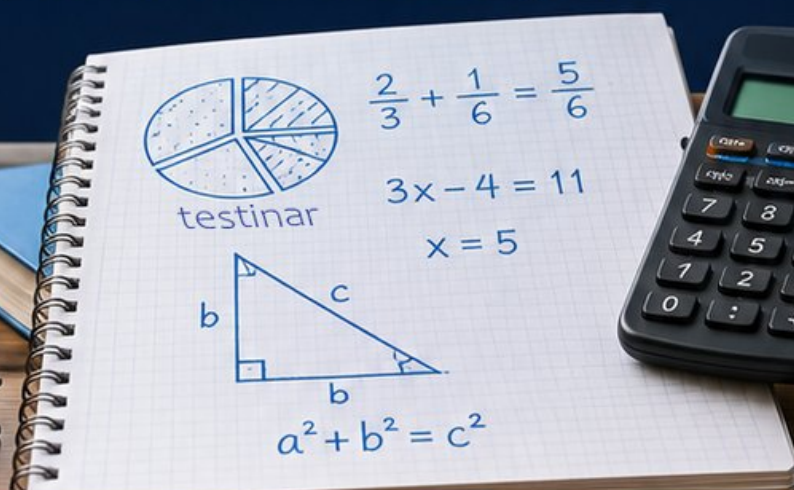
8
PRINTED
TESTS

+

2
ONLINE
TESTS

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

Standards-Aligned *Steady Southern* Problem Solving for Comprehensive Assessment Program



BUILT FOR
ACAP SUCCESS



REALISTIC TESTS
& QUESTION TYPES



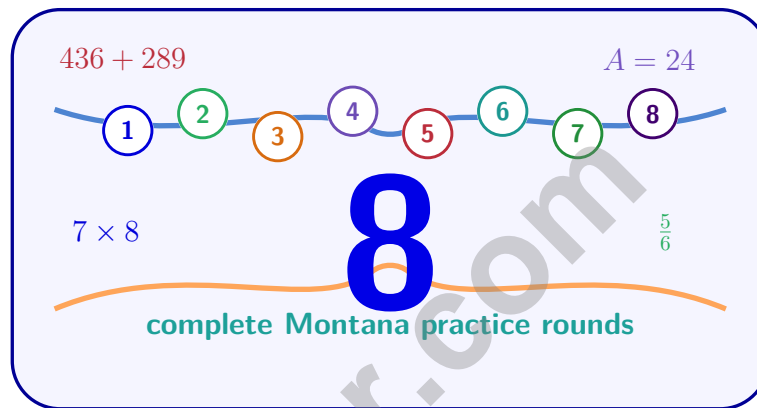
STRENGTHEN
MATH SKILLS



REVIEW, PRACTICE,
AND IMPROVE

8 Montana MAST Grade 6 Math Practice Tests

Standards-Aligned Big-Sky Math Stamina for Montana Aligned to Standards Through-Year



Eight complete 40-question Grade 6 practice rounds for MAST, built for big-sky math stamina 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, Montana Math Explorer!

Eight focused rounds using big-sky math stamina

This book gives you eight full Grade 6 practice tests for MAST. Each round uses wide valleys, mountain passes, and patient problem routes as a fresh mental backdrop while you read closely, choose a smart strategy, show your work, and check whether your answer makes sense.

Your Montana Practice Promise

Give the problem space: read, draw or list, solve, and check the scale of the answer.

Read

Plan

Check

How to Use This Book

A eight-session routine for big-sky math stamina

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.

Montana review rhythm: Work one round, mark the tough climbs, and practice those skills before the next ascent.



What Is Inside?

Eight MAST tests, 320 questions, and a full review path

Part	What You Will Practice
Tests 1–3	Foundation rounds for ratios, rational numbers, operations, and careful reading.
Tests 4–6	Skill-building rounds with expressions, equations, geometry, data, and problem models.
Tests 7–8	Final stamina rounds 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. Big-sky math stamina 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 chef prepares pasta for an event. The table shows the relationship between servings and pasta used.

Number of Servings	Pounds of Pasta
4	1
8	2
12	3
20	5

What is the unit rate in pounds of pasta per serving?

- A. 0.2 lbs per serving C. 0.5 lbs per serving
 B. 0.25 lbs per serving D. 1 lb per serving
- 2) In a proportional relationship, if $y = kx$, what does k represent?
- A. Where the line crosses the vertical axis C. The independent variable
 B. The constant rate of change (how much y changes for each unit of x) D. The dependent variable
- 3) A deep-sea submersible is at a depth of $-2,500$ meters. It rises 300 meters. What is its new depth?
- A. $-2,800$ meters C. 2,200 meters
 B. $-2,200$ meters D. 2,800 meters



4) Which of the following equals 32?

A. 2^5

C. 4^2

B. 2^4

D. 8^2

5) A rectangle has length ℓ and width 5. The area is 5ℓ square units. What are the factors of 5ℓ ?

A. 5 only

C. 5 and ℓ

B. ℓ only

D. 5ℓ only

6) Evaluate $2x + y$ when $x = 2.5$ and $y = 3$.

A. 5

C. 8

B. 6

D. 11

7) Which expression is equivalent to $3(x + 2) + 2x$?

A. $5x + 6$

C. $3x + 6 + 2x$

B. $5x + 2$

D. $6x + 2$

8) You must be older than 18 to vote. Which inequality best describes this, with a as your age?

A. $a \leq 18$

C. $a < 18$

B. $a \geq 18$

D. $a > 18$

9) A parallelogram has a base of 9 in and a height of 7 in. What is its area?

A. 16 in^2

C. 63 in^2

B. 32 in^2

D. 126 in^2



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

- A. 12 cm^3 C. 28 cm^3
 B. 21 cm^3 D. 42 cm^3

11) Ice must stay below 32°F . What is the greatest whole-number temperature below 32?

12) A rectangle has vertices at $(3, 2)$, $(8, 2)$, $(8, 6)$, and $(3, 6)$. If a point is at $(8, 2)$, which vertex is diagonally opposite?

- A. $(3, 6)$ C. $(8, 6)$
 B. $(3, 2)$ D. $(8, 2)$

13) Three students write questions about pets. Which is statistical?

Student 1: How many pets do I have?
Student 2: How many pets do sixth graders have?
Student 3: What kind of pet do I prefer?

- A. Student 1 C. Student 3
 B. Student 2 D. None of them

14) For which data set is the mean equal to the median?

- A. 1, 2, 3, 4, 20 C. 1, 2, 2, 2, 10
 B. 2, 4, 6, 8, 10 D. 5, 10, 15, 20, 100



1) Which term has a coefficient of $\frac{2}{3}$?

A. $\frac{2}{3}$
 B. $\frac{2}{3}r$

C. $2r + 3$
 D. $r + \frac{2}{3}$

2) A student rolls two standard dice. If the probability of getting a sum of 12 is $\frac{1}{36}$, is this event likely or unlikely?

A. Likely
 B. Impossible

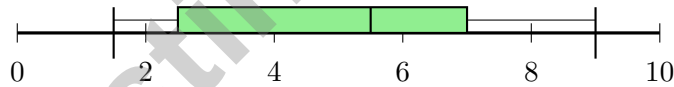
C. Certain
 D. Unlikely

3) A basketball team's scores in seven games are 56, 62, 58, 71, 65, 60, 68. When ordered: 56, 58, 60, 62, 65, 68, 71. Identify Q_1 .

A. 56
 B. 62

C. 60
 D. 58

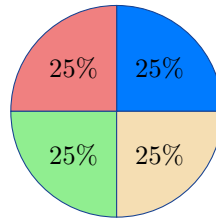
4) Which value represents Q_1 in the box plot shown?



A. 1.5
 B. 2.5

C. 5.5
 D. 9





5)

A restaurant surveyed 180 customers about their favorite drink. The circle graph shows 25% like coffee. How many customers prefer coffee?

- A. 45 C. 25
 B. 35 D. 55

6) Which expression is equivalent to $2(5x - 4)$?

- A. $10x - 8$ C. $5x - 8$
 B. $7x - 2$ D. $10x - 4$

7) The weight of a piece of luggage must not exceed 50 pounds. Which inequality best represents this, where w is the weight?

- A. $w > 50$ C. $w < 50$
 B. $w \leq 50$ D. $w \geq 50$

8) A trapezoid has bases of 13 ft and 7 ft and an area of 50 ft^2 . What is the height?

- A. 4 ft C. 6 ft
 B. 5 ft D. 7 ft



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& answers

- 1) A survey asks: "How many hours did you spend reading last week?"
What is the population for this question?
- A. All the people whose reading time is being studied
- B. Hours of the day
- C. Books in the library
- D. The number 7
- 2) The distance between $(x, 7)$ and $(8, 7)$ is 5 units. Both points have the same y -coordinate. What is x ?
- A. $x = 3$ or $x = 13$
- B. $x = 2$ or $x = 14$
- C. $x = 4$ or $x = 12$
- D. $x = 1$ or $x = 15$
- 3) What is the value of $2^4 \div 4 + 2$?
- A. 6
- B. 8
- C. 10
- D. 18
- 4) A store sells packs of pencils. Using the expression $4(5n + 2)$, where n is the number of packs, what is an equivalent expression?
- A. $20n + 2$
- B. $20n + 8$
- C. $9n + 6$
- D. $5n + 6$
- 5) A video game has a level that is completed if the player earns no less than 500 points. Which inequality describes the qualifying score s ?
- A. $s < 500$
- B. $s \leq 500$
- C. $s \geq 500$
- D. $s > 500$



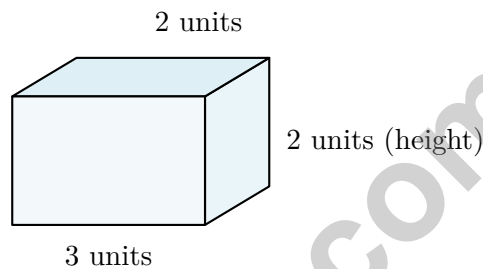
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6) Which pair of dimensions would give a triangle an area of 48 cm^2 ?

- A. Base 6 cm, height 10 cm C. Base 10 cm, height 9 cm
 B. Base 8 cm, height 12 cm D. Base 16 cm, height 5 cm

7) A trapezoid has bases of 7 m and 9 m with a height of 4 m. What is its area?

- A. 20 m^2 C. 36 m^2
 B. 32 m^2 D. 64 m^2



8)

How many unit cubes fit in this rectangular prism?

- A. 7 unit cubes C. 18 unit cubes
 B. 12 unit cubes D. 24 unit cubes

9) A rectangle has vertices at $(0, 0)$, $(5, 0)$, $(5, 3)$, and $(0, 3)$. What is its area?

- A. 8 square units C. 16 square units
 B. 12 square units D. 15 square units

10) A rectangular prism has surface area 550 cm^2 . Its length is 15 cm and width is 10 cm. What is its height?

- A. 5 cm C. 8 cm
 B. 7 cm D. 10 cm



Montana MAST Practice Test Answer Keys

How to use this Montana MAST 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 big-sky math stamina
3. rework the problem before reading the full explanation, using this reminder:
Give the problem space: read, draw or list, solve, and check the scale of the answer.

A calm Montana correction routine turns every missed item into useful practice. Work one round, mark the tough climbs, and practice those skills before the next ascent.



Montana Practice Test Answers and Explanations

Review the eight printed MAST tests with patient, strong, and ready for the next climb habits.

Practice Test 1 Answers and Explanations

- 1) **Choice B is correct.** **(6.RP.2)** From any row: $1 \div 4 = 0.25$ lbs per serving. Check: $2 \div 8 = 0.25$. All rows confirm this.
- 2) **Choice B is correct.** **(6.EE.9)** In $y = kx$, k is the constant multiplier that shows the relationship: for every unit of x , the value of y changes by k units.
- 3) **Choice B is correct.** **(6.EE.3)** Rising (going up) from a negative depth: $-2,500 + 300 = -2,200$ meters.
- 4) **Choice A is correct.** **(6.EE.1)** $2^5 = 2 \times 2 \times 2 \times 2 \times 2 = 32$. Option B: $2^4 = 16$. Option C: $4^2 = 16$. Option D: $8^2 = 64$.
- 5) **Choice C is correct.** **(6.EE.4)** In the product $5 \times \ell = 5\ell$, the two factors are 5 and ℓ .
- 6) **Choice C is correct.** **(6.EE.3)** Substitute: $2(2.5) + 3 = 5 + 3 = 8$.
- 7) **Choice A is correct.** **(6.EE.3)** Distribute then combine: $3x + 6 + 2x = 5x + 6$.
- 8) **Choice D is correct.** **(6.EE.8)** "Older than 18" means strictly greater than: $a > 18$.
- 9) **Choice C is correct.** **(6.G.1)** Area = $9 \times 7 = 63 \text{ in}^2$.
- 10) **Choice D is correct.** **(6.G.2)** $V = 7 \times 3 \times 2 = 21 \times 2 = 42 \text{ cm}^3$.
- 11) **The correct answer is 31.** **(6.EE.8)** The greatest whole number less than 32 is 31.
- 12) **Choice A is correct.** **(6.G.3)** Diagonal corners of a rectangle are (3, 2) with (8, 6), and (8, 2) with (3, 6). The diagonally opposite vertex to (8, 2) is (3, 6).
- 13) **Choice B is correct.** **(6.SP.3)** Student 2's question asks about many sixth graders (variability expected), requiring data collection. Students 1 and 3 ask about one person's single preference, which have fixed answers.
- 14) **Choice B is correct.** **(6.SP.3)** For set B: Mean = $\frac{2 + 4 + 6 + 8 + 10}{5} = 6$, Median = 6. The symmetric distribution makes them equal.
- 15) **Choice D is correct.** **(6.SP.4)** Difference = $6 - 3 = 3$ more students completed 30 jumping jacks than 25 jacks.
- 16) **Choice C is correct.** **(6.SP.5)** For symmetric distributions, the mean and median are nearly equal and both cluster at the center of symmetry.
- 17) **Choice A is correct.** **(6.SP.4)** Order the data: 32, 35, 39, 41, 44, 46, 48, 50, 53, 57. With 10 values (an even count), the median is the average of the 5th and 6th values: $(44 + 46) \div 2 = 45^\circ\text{F}$.
- 18) **The correct answer is 99.** **(6.G.1)** $A = \frac{1}{2} \times 11 \times 18 = 99 \text{ in}^2$.
- 19) **The correct answer is A: length $|4 - 0| = 4$, width $|6 - 0| = 6$, perimeter $2(4 + 6) = 20$ units. C: side length 5, perimeter $4 \times 5 = 20$ units..** **(6.NS.8)** A: perimeter $2(4 + 6) = 20$ ✓. B: perimeter $2(5 + 3) = 16$. C: perimeter $4 \times 5 = 20$ ✓. D: perimeter $2(6 + 2) = 16$. E: perimeter $2(3 + 4) = 14$.
- 20) **Choice A is correct.** **(6.SP.4)** A histogram can group related ratings (1–2 as "low," 3 as "medium," 4–5 as "high") to clearly show that 28 out of 50 people were satisfied. The other displays would show individual ratings but not emphasize the grouping.
- 21) **Choice D is correct.** **(6.RP.1)** The whole class is split into $5 + 3 = 8$ equal ratio parts. Each part is $24 \div 8 = 3$ students, and the boys are 5 parts: $5 \times 3 = 15$.
- 22) **Choice A is correct.** **(6.RP.1)** Wins come first, so begin with $8 : 2$. Divide both parts by 2 to simplify the ratio to $4 : 1$.
- 23) **Choice C is correct.** **(6.RP.2)** Divide total cost by number of cookies: $6.00 \div 24 = 0.25$ dollars per cookie.
- 24) **Choice A is correct.** **(6.RP.3)** Method 1: 1 cup costs \$2, so unit price = \$2/cup. Method 2: 2 cups cost \$3, so unit price = $\$3 \div 2 = \$1.50/\text{cup}$. The methods have different unit rates and cannot be called equivalent recipes in terms of cost efficiency.
- 25) **Choice A is correct.** **(6.RP.3)** On a graph with gigabytes on the x-axis and cost on the y-axis, the point (1, 3) means 1 gigabyte (x-value) costs \$3 dollars (y-value).
- 26) **Choice A is correct.** **(6.RP.2)** $0.006 \times 100 = 0.6\%$.



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Notes From Your Math Builder

Hi, Math Builder!

◇ Through 8 practice tests, you built your math house brick by brick. The walls are strong. The roof is on. You are ready for anything test day brings. ◇

★ **Builders know:** good plans make strong houses. You learned to plan, then build. That helps with any problem. ★

Builder's Tools

- **Foundation:** ROCK SOLID. Math facts are in place.
- **Frame:** STRONG. You can break problems into parts.
- **Walls:** TIDY. Your work is neat and clear.
- **Roof:** DONE. You always answer the question.

Builder tip: on test day, build each answer like a tiny house. Read first. Plan next. Do the math. Then check!

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

Jay Daie

Your Math Builder

MASTER MATH. ACE YOUR TESTS.

This Grade 6 Math Practice Tests book is designed to help students build confidence, strengthen math skills, and excel on comprehensive assessments.

With 8 full-length printed tests and 2 online tests, this resource provides realistic practice, a variety of question types, and detailed answer explanations to help students achieve their best.

Perfect for classroom use, homework, test preparation, and extra practice at home.



PERFECT FOR

- ✓ Classroom Practice
- ✓ Homework & Review
- ✓ Independent Learning
- ✓ Test Preparation
- ✓ Skill Reinforcement
- ✓ Building Confidence

★ PRACTICE TODAY.
SUCCEED TOMORROW.

WHAT STUDENTS WILL GAIN



Stronger Math Skills

Build a solid foundation through targeted practice and review.



Better Problem Solving

Develop logical thinking and effective solution strategies.



Understand Key Concepts

Reinforce important math ideas aligned with standards.



Test Confidence

Get familiar with test formats and improve accuracy.



Achieve Success

Build confidence and perform your best on test day.

TOPICS COVERED

- ✓ Ratios & Rates
- ✓ Percents
- ✓ The Number System
- ✓ Statistics & Probability
- ✓ Expressions & Equations
- ✓ Data Analysis
- ✓ Geometry
- ✓ Measurement & Conversions
- ✓ Fractions & Decimals
- ✓ And More!



2 ONLINE TESTS

Extra online practice to reinforce learning and build confidence.

MORE PRACTICE. GREATER RESULTS.

Give your child the tools needed to develop strong math skills, confidence, and a positive attitude toward learning.



8 FULL-LENGTH
PRACTICE TESTS



2 ONLINE
PRACTICE TESTS



DETAILED ANSWER
EXPLANATIONS