

# 6

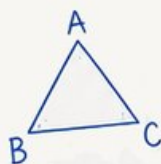
# Montana MAST

GRADE  
**6**  
MATH

## PRACTICE TESTS

Standards-Aligned  
Steady Southern  
Problem Solving for  
Comprehensive  
Assessment Program

$$2x + 3 = 11$$



$$7^2 = 49$$

BUILD SKILLS.  
GAIN CONFIDENCE.  
**SUCCEED!**



### 6 PRINTED TESTS

Realistic practice to build confidence and mastery



### 2 ONLINE TESTS

Extra practice for continued success



### DETAILED ANSWER EXPLANATIONS

Learn with step-by-step solutions



### FOCUSED & EFFECTIVE

Target key math skills with purposeful practice



### 6 PRINTED TESTS + 2 ONLINE TESTS

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



### PRACTICE

Sharpen skills with targeted practice tests



### REVIEW

Understand concepts and strengthen skills

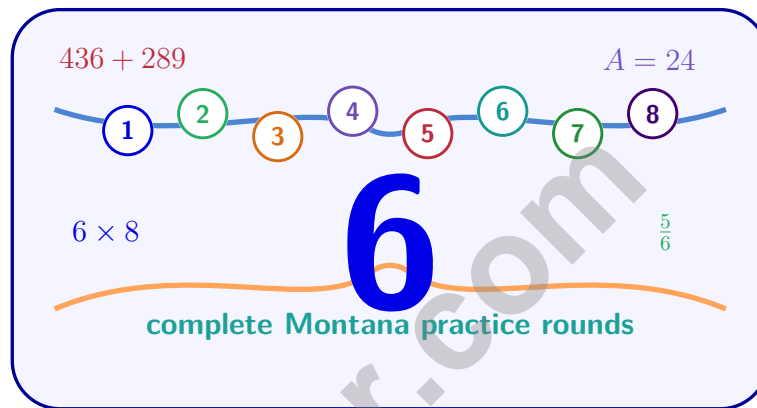


### SUCCEED

Build confidence and achieve your best

# 6 Montana MAST Grade 6 Math Practice Tests

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



Six 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 six 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 six-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 1–2	Foundation rounds for ratios, rational numbers, operations, and careful reading.
Tests 3–5	Skill-building rounds with expressions, equations, geometry, data, and problem models.
Test 6	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. Big-sky math stamina means recognizing the skill even when the next question changes topic, changes format, or asks for an explanation.

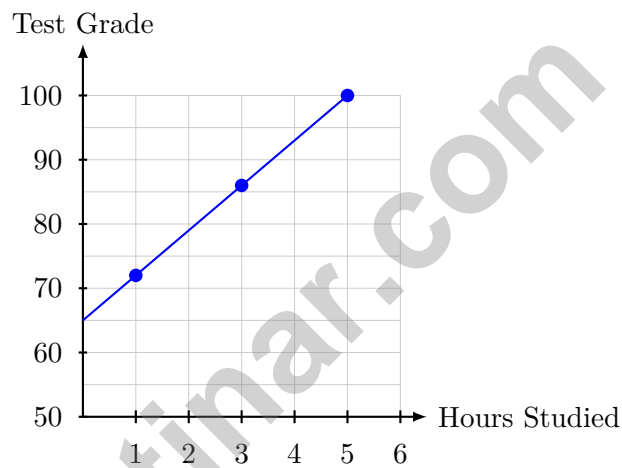


Scan me!  
For more practice  
& answers

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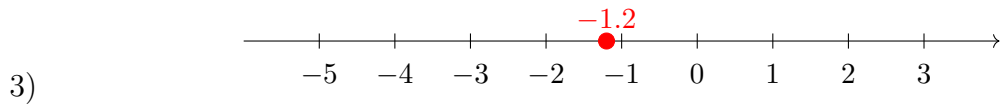
- 1) Which expression matches “the product of a number  $f$  and the difference of 10 and 2”?
- A.  $f \cdot 10 - 2$                        C.  $(f - 10) \cdot 2$   
 B.  $f - 10 + 2$                        D.  $f(10 - 2)$
- 2) The graph shows the relationship between the number of hours a student studies and the grade received on a test.



Approximately how much does the test grade increase for each additional hour of study?

- A. 5 points per hour                       C. 10 points per hour  
 B. 7 points per hour                       D. 12 points per hour





Which number from the list below is closest to the point shown?

- A. -2
- B. -1
- C. 0
- D. 3

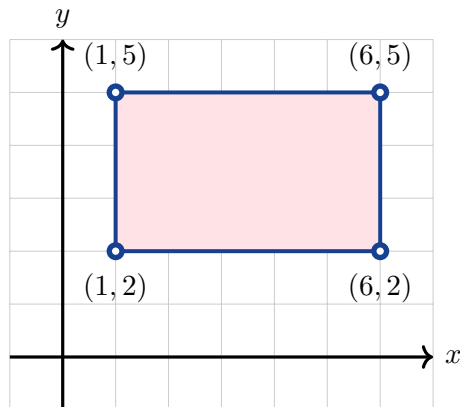
4)

Notebooks Purchased	Total Cost (\$)
3	12
5	20
8	$k$

Use the table to find the cost per notebook and calculate the value of  $k$  when 8 notebooks are purchased.



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5)

A rectangle has vertices at  $(1, 2)$ ,  $(6, 2)$ ,  $(6, 5)$ , and  $(1, 5)$ . What is the perimeter?

- A. 14 units                       C. 18 units  
 B. 16 units                       D. 20 units

6) A team started a season with a point differential of 0. They scored 48 points and allowed 52 points. What is their point differential?

- A.  $-4$                                C. 100  
 B. 4                                   D.  $-100$

$$3^2 + 4 \times 2$$

Step 1:  $9 + 4 \times 2$

Step 2:  $= 9 + 8$

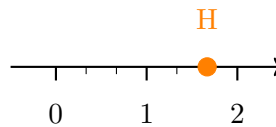
Step 3:  $= 17$

7)

What is the first step in evaluating  $3^2 + 4 \times 2$ ?

- A. Add 3 and 4.                       C. Multiply  $4 \times 2$ .  
 B. Evaluate the exponent:  $3^2 = 9$ .       D. Multiply  $3 \times 2$ .

- 1) The number line below shows tick marks at thirds. Point H is marked. What is the value of point H?



- A.  $1\frac{2}{3}$                        C.  $1\frac{1}{3}$   
 B.  $1\frac{1}{2}$                        D. 2
- 2) What is the difference between the population and the sample?
- A. The population is smaller than the sample.  
 B. The population is the entire group being studied; the sample is a subset that is surveyed.  
 C. The population is the number of people; the sample is the data.  
 D. There is no difference.
- 3) An online store's daily revenue (dollars) for one week: {1200, 1250, 1300, 1350, 1400, 1450, 3000}. The manager made an error: which statistic is least affected by this \$3000 outlier?
- A. Mean                       C. Median  
 B. Range                       D. Standard deviation
- 4) A circle graph shows 600 total voters. One section represents 16.5%. How many voters are in this section? Express your answer as a whole number.



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5) A standard die is rolled twice. How many possible outcomes are in the sample space?

- A. 6                                       C. 36  
 B. 12                                       D. 72

6) A student records the number of minutes spent on homework: 24, 31, 28, 35, 29, 32, 26. Arranging in a stem-and-leaf plot, the data spans:

- A. One stem (20s)                       C. Three stems  
 B. Two stems (20s and 30s)         D. Cannot determine

7) Four numbers have a mean of 25. Three of them are 20, 28, 32. What is the fourth number?

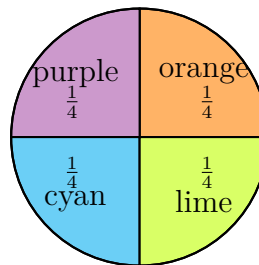
8) A stem-and-leaf plot shows test scores: Stem 6: Leaf 5, 7, 9 Stem 7: Leaf 1, 2, 2, 4, 4, 8 Stem 8: Leaf 0, 3, 6, 9 Stem 9: Leaf 2, 5  
What is the median test score?

- A. 72                                       C. 78  
 B. 80                                       D. 74

9) A student says “62% means  $\frac{62}{10}$ .” Is this correct?

- A. Yes, this is correct.                       C. No,  $62\% = 62$ .  
 B. No,  $62\% = \frac{6.2}{10}$ .                               D. No,  $62\% = \frac{62}{100}$ .





1)

The spinner above has four equal sections. What is the probability of spinning orange or cyan?

- A.  $\frac{1}{4}$   
 B.  $\frac{1}{2}$

- C.  $\frac{3}{4}$   
 D. 1

2)

Bags	2	4	6	8
Apples	14	28	42	56

Based on the table, what is the unit rate in apples per bag?

- A. 5 apples per bag  
 B. 7 apples per bag  
 C. 14 apples per bag  
 D. 28 apples per bag

3) For 3, 5, 7, 9, 11, 13, 15, find the interquartile range.



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& answers



**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 six printed MAST tests with patient, strong, and ready for the next climb habits.

### Practice Test 1 Answers and Explanations

- 1) **Choice D is correct.** (6.EE.3) “The difference of 10 and 2” is  $(10 - 2)$ . “The product of  $f$  and” that difference is  $f(10 - 2)$ .
- 2) **Choice B is correct.** (6.EE.9) The line goes from approximately  $(1, 72)$  to  $(5, 100)$ . Slope =  $\frac{100-72}{5-1} = \frac{28}{4} = 7$  points per hour.
- 3) **Choice B is correct.** (6.NS.7) Find the distance from  $-1.2$  to each choice: to  $-2$  is  $0.8$ , to  $-1$  is  $0.2$ , to  $0$  is  $1.2$ , to  $3$  is  $4.2$ . The smallest distance is to  $-1$ , so it is the closest.
- 4) **The correct answer is 32.** (6.EE.6) Cost per notebook =  $\$12 \div 3 = \$4$ . For 8 notebooks:  $k = 8 \times 4 = 32$  dollars.
- 5) **Choice B is correct.** (6.NS.8) Length:  $|6 - 1| = 5$  units. Width:  $|5 - 2| = 3$  units. Perimeter:  $2(5 + 3) = 16$  units.
- 6) **Choice A is correct.** (6.EE.3) Differential is points scored minus points allowed:  $48 - 52 = -4$ .
- 7) **Choice B is correct.** (6.EE.1) Following PEMDAS, exponents come before multiplication and addition. The diagram shows Step 1 is evaluating  $3^2 = 9$ .
- 8) **The correct answer is 100.** (6.G.1)  $A = \frac{1}{2} \times 25 \times 8 = 100 \text{ ft}^2$ .
- 9) **Choice D is correct.** (6.EE.4)  $4x + 2y$  has 2 terms.  $5m + 3n + 2p + 1$  has 4 terms. Total:  $2 + 4 = 6$ .
- 10) **Choice A is correct.** (6.EE.3) Substitute  $m = 2$ :  $5(2) - 7 = 10 - 7 = 3$ .
- 11) **Choice D is correct.** (6.EE.3) Combine like terms:  $(12 - 4 + 3 - 1)y = 10y$ .
- 12) **Choice A is correct.** (6.EE.5) Subtract 9 from both sides:  $x = 16 - 9 = 7$ .
- 13) **Choice C is correct.** (6.EE.8) “No greater than 32” means  $t \leq 32$ , which includes 32 itself. But “below 32” means  $t < 32$ , excluding 32, so C is not correct.
- 14) **Choice D is correct.** (6.EE.8) “At most 3 weeks” means “less than or equal to 3 weeks,” so  $w \leq 3$  (includes 3 weeks).
- 15) **The correct answer is 228.** (6.G.4)  $SA = 2(9)(4) + 2(9)(6) + 2(4)(6) = 72 + 108 + 48 = 228 \text{ cm}^2$ .
- 16) **Choice C is correct.** (6.G.1) Area = base  $\times$  height =  $12 \times 5 = 60 \text{ cm}^2$ . The slanted side is irrelevant.
- 17) **Choice D is correct.** (6.G.2)  $V = 4 \times 4 \times 5 = 16 \times 5 = 80 \text{ cm}^3$ .
- 18) **Choice A is correct.** (6.G.3) Three vertices form a triangle, which is a three-sided polygon.
- 19) **Choice B is correct.** (6.G.1) Area of a trapezoid =  $\frac{1}{2}(b_1 + b_2) \times h = \frac{1}{2}(8 + 8) \times 4 = \frac{1}{2} \times 16 \times 4 = 32$  square units.
- 20) **The correct answer is Both coordinates are positive.** (6.NS.8) In Quadrant I (upper right), the  $x$ -coordinate is always positive (A is correct) and the  $y$ -coordinate is always positive (C is correct). Statement B is false because  $y > 0$  in Quadrant I. Statement D is not always true. Statement E is false because Quadrant I is upper right, not lower right.
- 21) **Choice D is correct.** (6.SP.3) By definition, a statistical question expects different answers from different sources and requires collecting and analyzing data. The size of the number or frequency of asking does not define a statistical question.
- 22) **Choice C is correct.** (6.SP.2) Spread measures include range, interquartile range (IQR), and mean absolute deviation (MAD). Mean and median are measures of center; mode is the most frequent value.
- 23) **Choice D is correct.** (6.SP.3) With 7 values, the median is the 4th value when ordered: 0.5, 0.8, 1.2, 1.5, 2.5, 2.8, 3.1. Median is 1.5.
- 24) **Choice C is correct.** (6.SP.4) With 10 values, the median is the average of the 5th and 6th values:  $(8 + 8)/2 = 8$  hours.
- 25) **Choice B is correct.** (6.SP.5) For symmetric, bell-shaped distributions, the mean is at or very near the peak/center of the distribution.
- 26) **Choice C is correct.** (6.NS.3) Total combinations =  $3 \times 4 \times 2 = 24$ .
- 27) **Choice A is correct.** (6.SP.4) Class A values are 65, 67, 69, 72, 76, 78. The range is  $78 - 65 = 13$ .
- 28) **Choice D is correct.** (6.SP.4) Misleading graphs use visual techniques (truncated axes, 3D effects, non-uniform scales) to distort perception. The data itself may be correct, but the visual misrepresents it.



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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 6 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 TODAY. SUCCEED TOMORROW!

This Grade 6 Math Practice Tests book is designed to help students strengthen their math skills, master important concepts, and build the confidence they need to excel on comprehensive assessments.

With 6 full-length printed tests and 2 online tests, students get the review, practice, and realistic test experience they need to improve accuracy, develop problem-solving abilities, and reach their full potential.

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

6  
PRINTED  
TESTS

+

2  
ONLINE  
TESTS

## PERFECT FOR:

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

★ BUILD SKILLS.  
GAIN CONFIDENCE.  
SUCCEED!

## 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.



### Deeper Understanding

Reinforce key concepts aligned with standards through meaningful practice.



### Test Confidence

Become familiar with test formats and improve accuracy and speed.



### Achieve Success

Build confidence and perform your best on test day.

## TOPICS COVERED

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



6 FULL-LENGTH  
PRINTED TESTS



2 ONLINE  
PRACTICE TESTS



DETAILED ANSWER  
EXPLANATIONS