

8

Montana MAST

GRADE 7

MATH

PRACTICE TESTS

✓ Standards Aligned
Problem Solving

For Comprehensive
Assessment Programs



8 PRINTED
TESTS



2 ONLINE
TESTS



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



BUILD CONFIDENCE



STRENGTHEN SKILLS



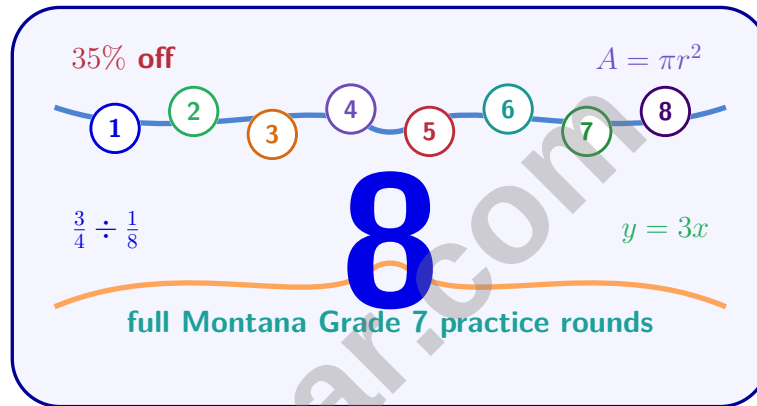
THINK SMARTER



BE TEST-READY

8 Montana MAST Grade 7 Math Practice Tests

A clean review path for Montana Grade 7 unit-rate reasoning, proportional equations, geometry, statistics, and probability models



Eight complete 40-question Grade 7 MAST 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, Montana Grade 7 Problem Solver!

Eight focused rounds for sharper MAST math thinking

This book gives you eight full Grade 7 MAST 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 Montana 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.

Montana 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 MAST tests, 320 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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- 1) A machine prints 120 pages every 2 minutes. What is the constant of proportionality k if p is pages and t is time in minutes?

☐ A. $k = 2$

☐ B. $k = 120$

☐ C. $k = \frac{1}{60}$

☐ D. $k = 60$

- 2) A store owner tracks inventory. She started with $(15x + 20)$ units. After selling $(8x - 5)$ units, how many units remain?

Start: $(15x + 20)$ units

Sold: $(8x - 5)$ units

Remain: ?

☐ A. $7x + 25$

☐ B. $23x + 15$

☐ C. $7x + 15$

☐ D. $7x - 25$

- 3) Evaluate: $(-4)^0$

☐ A. 0

☐ B. 1

☐ C. -4

☐ D. Undefined

- 4) Your checking account starts with a balance of \$800. You deposit \$200, withdraw \$150, and receive \$300 in direct deposit. What is your new balance?



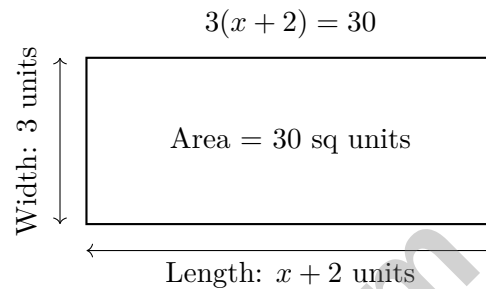
- 5) A delivery service charges an initial fee of \$8 plus \$3 per package. If the total charge is \$26, which equation represents this, where p is the number of packages?

☐ A. $8p + 3 = 26$

☐ C. $3(p + 8) = 26$

☐ B. $3p + 8 = 26$

☐ D. $8 + 26 = 3p$



6)

A rectangle has width 3 and length $x + 2$. If the area is 30 square units, what is the length?

☐ A. $x + 2 = 8$

☐ C. $x + 2 = 12$

☐ B. $x + 2 = 10$

☐ D. $x + 2 = 15$

- 7) 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°

- 8) A bicycle rental shop charges per hour. The proportional graph passes through (3, 18) where x = hours and y = cost in dollars. What is the hourly rental fee?

☐ A. \$3

☐ C. \$18

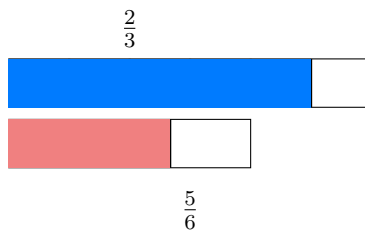
☐ B. \$54

☐ D. \$6



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- 9) The bar diagram shows two quantities. What is the difference?



- ☐ A. $\frac{1}{6}$
☐ C. $\frac{1}{3}$
- ☐ B. $\frac{3}{6}$
☐ D. 1
- 10) An investment account earns 7% simple interest per year. If someone invests \$3,000, how much interest will they earn after 3 years?

- 11) Convert $\frac{5}{16}$ to a decimal.

- ☐ A. 0.3125
 ☐ C. 0.515
- ☐ B. 0.325
 ☐ D. 0.625

- 12) A climber ascends 150 feet then descends 210 feet. What is the net change in elevation?

- ☐ A. -360 ft
 ☐ C. 60 ft
- ☐ B. -60 ft
 ☐ D. 360 ft



- 1) A card is drawn from a standard deck. What is the probability of drawing a king OR a queen?

☐ A. $\frac{4}{52}$
☐ B. $\frac{2}{13}$

☐ C. $\frac{2}{52}$
☐ D. $\frac{1}{26}$

- 2) If a scale drawing has a scale of 2 : 5, which of the following is true?

- ☐ A. The drawing is smaller than the actual object.
☐ B. The drawing is larger than the actual object.
☐ C. The drawing and the object are the same size.
☐ D. Cannot be determined without more information.

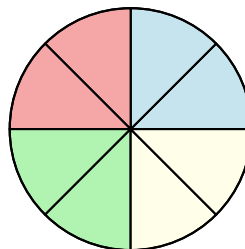
- 3) Evaluate: $-\frac{2}{3} - \frac{5}{6}$

☐ A. $-\frac{7}{6}$
☐ B. $-\frac{4}{3}$

☐ C. $-1\frac{1}{2}$
☐ D. $\frac{7}{6}$

- 4) A price p increases by 7%. Write the new price in factored form.

- ☐ A. $p + 0.07p = p(1 + 0.07) = 1.07p$
☐ B. $p - 0.07p$
☐ C. $0.07p$
☐ D. $p + 7$



- 5)

A spinner has 8 equal sections: 2 blue, 2 red, 2 green, and 2 yellow. Which expression shows the complement rule for finding the probability of NOT spinning blue or red?

☐ A. $\frac{2}{8}$
☐ B. $\frac{3}{8}$

☐ C. $1 - \frac{1}{2}$
☐ D. $\frac{6}{8}$



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6) A pizza place offers 3 types of crust, 6 sauce options, and 8 toppings. How many single-topping pizzas can be made?

☐ A. 17

☐ C. 72

☐ B. 42

☐ D. 144

7) A histogram shows the age distribution of volunteers at a community center. The interval 40–50 years has a frequency of 18. If there are 120 total volunteers, what percentage are in the 40–50 age range?

☐ A. 12.5%

☐ C. 18%

☐ B. 15%

☐ D. 40%

8) A researcher flipped three coins 160 times and recorded how many came up heads each time:

Heads Count	0	1	2	3
Frequency	22	56	62	20

What is the experimental probability of getting exactly 2 heads?

☐ A. $\frac{2}{3}$
☐ C. 0.31

☐ B. $\frac{62}{160}$
☐ D. 0.39

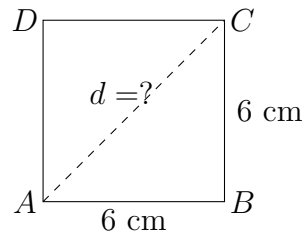
9) Which event has a probability of 1 (certain)?

☐ A. Rolling an even number on a standard die

☐ C. Picking a red card from a standard deck

☐ B. Flipping a coin and getting heads

☐ D. The sun rising tomorrow

1)

A square has a side length of 6 cm. What is the length of its diagonal?

☐ A. 6 cm

☐ C. 12 cm

☐ B. $6\sqrt{2}$ cm

☐ D. $\sqrt{36}$ cm

2)

Hours Worked	Earnings (\$)
1	12
2	24
3	36
4	48

Which equation represents the relationship where h = hours and E = earnings?

☐ A. $E = h + 12$
☐ C. $E = 12 + h$
☐ B. $E = 12h$
☐ D. $E = h^2 + 11$

3) A circle graph shows the genres of books in a library. If the Romance sector has a central angle of 90 degrees and the total is 360 degrees, what percentage of books are Romance?

☐ A. 10%

☐ C. 25%

☐ B. 15%

☐ D. 50%


4) A spinner has 8 equal sections: 4 red, 2 blue, 1 green, 1 yellow. What is $P(\text{red})$ for this uniform model?

☐ A. $\frac{1}{8}$

☐ B. $\frac{1}{4}$

☐ C. $\frac{1}{2}$

☐ D. $\frac{3}{4}$

5) If 1 US dollar equals 0.85 euros, how many euros would you receive for \$100?

☐ A. 90 euros

☐ B. 75 euros

☐ C. 80 euros

☐ D. 85 euros

6) Simplify: $7 - (-2) - 5$

☐ A. 0

☐ B. 4

☐ C. 10

☐ D. 14

7) What is the relationship between simple interest and each of the three variables in $I = Prt$?

☐ A. Interest increases proportionally with P and inversely with r and t☐ B. Interest depends only on t; the other variables have no effect☐ C. Interest is constant regardless of P, r, or t☐ D. Interest increases proportionally with P, r, and t

8) A cube has surface area 216 cm^2 . What is the edge length?

☐ A. 4 cm

☐ B. 6 cm

☐ C. 36 cm

☐ D. 1296 cm



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Montana MAST 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 Montana MAST practice test.

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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice D is correct.** (7.RP.1-7.RP.3) The rate is $\frac{120 \text{ pages}}{2 \text{ minutes}} = 60$ pages per minute, so $k = 60$.
- 2) **Choice A is correct.** (7.EE.1-7.EE.2) Subtract: $(15x + 20) - (8x - 5) = 15x + 20 - 8x + 5 = 7x + 25$ units.
- 3) **Choice B is correct.** (7.EE.1-7.EE.2) The zero exponent rule applies to any non-zero base, including negative bases: $(-4)^0 = 1$.
- 4) **The correct answer is \$1150.** (7.RP.3) Balance: $800 + 200 - 150 + 300 = \1150 .
- 5) **Choice B is correct.** (7.EE.4a) Initial fee is \$8; each package adds \$3. Equation: $3p + 8 = 26$.
- 6) **Choice B is correct.** (7.EE.4a) Area: $3(x + 2) = 30$. Divide by 3: $x + 2 = 10$. (So length is 10 units; if needed, $x = 8$.)
- 7) **Choice A is correct.** (7.G.1-7.G.5) Let angles be $2x$ and $3x$. Then $2x + 3x = 90^\circ$, so $5x = 90^\circ$ and $x = 18^\circ$. Larger angle is $3(18) = 54^\circ$.
- 8) **Choice D is correct.** (7.RP.1-7.RP.3) Unit rate = $18 \div 3 = \$6$ per hour.
- 9) **Choice A is correct.** (7.NS.1-7.NS.3) Difference: $\frac{5}{6} - \frac{2}{3} = \frac{5}{6} - \frac{4}{6} = \frac{1}{6}$.
- 10) **The correct answer is \$630.** (7.RP.3) Simple interest = $P \times r \times t = \$3,000 \times 0.07 \times 3 = \630 .
- 11) **Choice A is correct.** (7.NS.2d) Divide $5 \div 16 = 0.3125$. Since $16 = 2^4$, this is a terminating decimal.
- 12) **Choice B is correct.** (7.NS.1-7.NS.3) Net change: $150 - 210 = -60$ feet.
- 13) **Choice B is correct.** (7.NS.1-7.NS.3) In proper scientific notation, the coefficient must satisfy $1 \leq a < 10$. $0.0000625 = 6.25 \times 10^{-5}$.
- 14) **The correct answer is \$7.35.** (7.RP.3) Simple: $1500 \times 0.07 \times 2 = 210$. Compound: $1500(1.07)^2 = 1717.35$; interest = 217.35 . Difference: $217.35 - 210 = 7.35$.
- 15) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute -2 : $-2(x) - 2(-3) + 5x = -2x + 6 + 5x$. Combine: $-2x + 5x + 6 = 3x + 6$.
- 16) **Choice B is correct.** (7.EE.3-7.EE.4) Set up: $3m + 5 = 20 \Rightarrow 3m = 15 \Rightarrow m = 5$ months.
- 17) **Choice A is correct.** (7.EE.3-7.EE.4) Correct: Add 5: $0.2x = 8$. Divide: $x = 40$. Common error: dividing immediately $x = \frac{3}{0.2} = 15$ (wrong).
- 18) **Choice B is correct.** (7.SP.5-7.SP.8) $P(\text{not blue}) = 1 - P(\text{blue}) = 1 - 0.3 = 0.7$.
- 19) **The correct answer is B,D.** (7.NS.1-7.NS.3) B: $-33 + 33 = 0$ (opposites sum to zero). D: $-100 + 100 = 0$ (opposites sum to zero). A: $20 + (-10) = 10$ (not zero). C: $14 + (-7) = 7$ (not zero).
- 20) **Choice A is correct.** (7.NS.2) $-\frac{7}{8} \times 8 = \frac{-7 \times 8}{8} = -7$. The 8's cancel.
- 21) **Choice D is correct.** (7.RP.3) Total fees = $95 \times 2 = \$190$.
- 22) **The correct answer is (6, 7).** (7.NS.1-7.NS.3) $6^2 = 36$ and $7^2 = 49$. Since $36 < 40 < 49$, the answer is between 6 and 7.
- 23) **Choice A is correct.** (7.SP.3) Predictability requires tight clustering. Town A concentrates at 4–8 inches (range 8). Town B spreads 0–14 inches (range 14), making individual snowfall unpredictable.
- 24) **Choice A is correct.** (7.SP.1-7.SP.4) The smallest stem is 4 with the smallest leaf 2, giving 42.
- 25) **Choice C is correct.** (7.RP.1-7.RP.3) Set up the proportion $\frac{2}{24} = \frac{x}{60}$. Cross multiply: $24x = 120$, so $x = 5$ cups.
- 26) **Choice B is correct.** (7.G.4-7.G.6) Rectangle: $6 \times 4 = 24 \text{ m}^2$. Triangle: $\frac{1}{2} \times 6 \times 3 = 9 \text{ m}^2$. Total: $24 + 9 = 33 \text{ m}^2$. The student forgot to use the triangle area formula $\frac{1}{2} \times b \times h$.
- 27) **Choice C is correct.** (7.G.4-7.G.6) Side of square = $20/4 = 5 \text{ cm}$. Base area = $5^2 = 25 \text{ cm}^2$. Volume = $25 \times 8 = 200 \text{ cm}^3$.
- 28) **Choice B is correct.** (7.G.1-7.G.5) When two sides and the angle between them are given, exactly one triangle is uniquely determined.
- 29) **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.
- 30) **Choice B is correct.** (7.SP.1-7.SP.4) The differences between 38%, 40%, and 42% demonstrate normal sampling variability. Even though all three are random samples from the same population, each will produce slightly different



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Hi, Persistent Problem Solver!

◇ Some Grade 7 questions ask you to hold several ideas in your mind at once. That can feel hard, and that is exactly why practice matters. ◇

★ **Remember this:** You showed persistence by continuing through the set. That habit is powerful because difficult problems often open after one more good attempt. You practiced across 8 full Grade 7 practice tests, and that repeated effort matters. ★

Persistence Tools

- **Try a Smaller Case:** Use an easier number to see the pattern.
- **Draw It:** Make the situation visible.
- **Restate It:** Say the question in your own words.
- **Check One Step:** Fix the first unclear place.

Grade 7 test-day tip: When stuck, do not restart everything. Find the first step you trust, then rebuild from there.

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

Jay Daie

Your Persistence Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **8** 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:

8 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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