

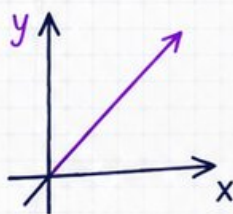
3

Montana MAST

GRADE
7
MATH

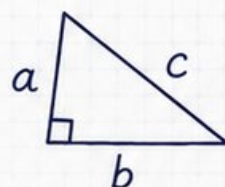
PRACTICE TESTS

- ✓ Standards Aligned
Problem Solving
For Comprehensive
Assessment Programs



$$y = mx + b$$

$$\frac{2}{3}x - \frac{4}{5} = \frac{1}{2}$$



$$3(x - 2) = 2x + 5$$



3 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
Math Skills



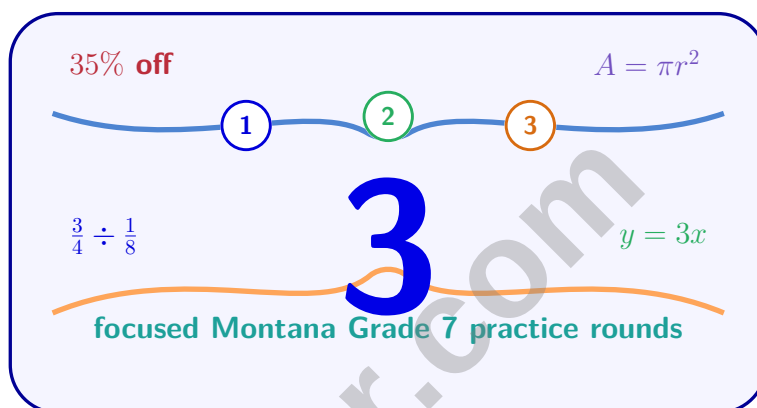
Detailed Answers
& Explanations



Improve Test
Performance

3 Montana MAST Grade 7 Math Practice Tests

Montana Grade 7 Math Practice with Clear Review Steps



Three 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!

Three focused rounds for sharper MAST math thinking

This book gives you three 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

A three-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?

Three MAST tests, 120 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Proportional relationships, unit rates, percents, rational-number operations, and careful reading.
Test 3	Expressions, equations, inequalities, scale drawings, geometry, data, probability, and multi-step problem solving.
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 model of a rectangular soccer field is 15 cm long at a scale of 1 cm : 2 m. What is the length of the actual field?

☐ A. 2 m☐ C. 15 m☐ B. 7.5 m☐ D. 30 m

2) An athlete's predicted marathon time was 3.5 hours, but the actual time was 3.2 hours. What is the percent error?

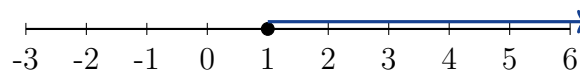
☐ A. 9.4%☐ C. 8.6%☐ B. 10.9%☐ D. 91.4%

3) Which expression is equivalent to $-(4x - 7)$?

☐ A. $-4x - 7$ ☐ C. $4x - 7$ ☐ B. $-4x + 7$ ☐ D. $4x + 7$

4) A bank account has a balance of -45 dollars (overdrawn). After a deposit and withdrawal, the balance becomes -20 dollars. What was the net change in the account (deposit minus withdrawal)? Write your answer as an integer with the appropriate sign.

5) Which number line shows the solution to $x \geq 1$?

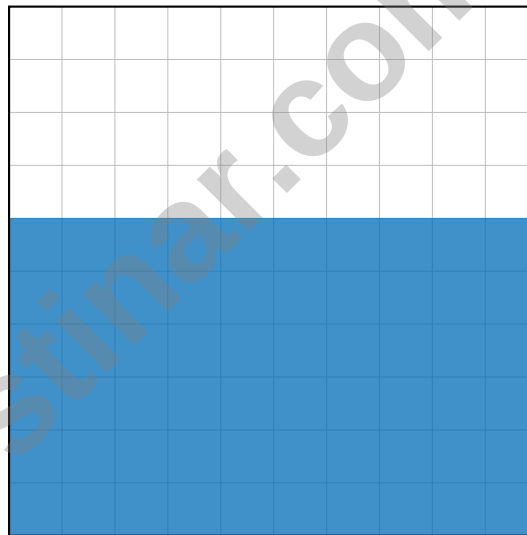
☐ A. Open circle at 1 pointing right☐ C. Closed circle at 1 pointing right☐ B. Closed circle at 1 pointing left☐ D. Open circle at 1 pointing left

6) A toy train layout uses a scale of 1 inch : 4 feet. A piece of track on the layout is 18 inches long. A student incorrectly calculates the actual length as 4.5 feet by dividing. What should the correct answer be?

- ☐ A. 4.5 feet (the student is correct) ☐ C. 14 feet
☐ B. 9 feet ☐ D. 72 feet

7) Sofia opens a savings account with \$400 at a simple interest rate of 2.5% per year. What will be the total amount in her account after 4 years?

- ☐ A. \$410 ☐ C. \$430
☐ B. \$500 ☐ D. \$440



8)

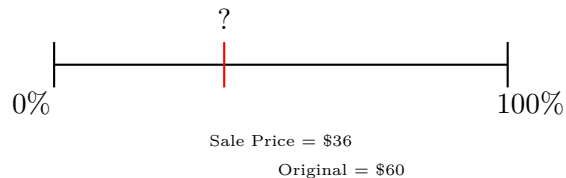
Percent grid: 60 squares shaded of 100 total

The grid above shows a percent model. What percent is shaded?

- ☐ A. 40% ☐ C. 60%
☐ B. 50% ☐ D. 75%



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9)

A discount bar shows original price \$60 and sale price \$36. What percent discount was applied?

☐ A. 30%☐ C. 36%☐ B. 24%☐ D. 40%10) Simplify: $\frac{7}{\frac{8}{\frac{3}{5}}}$ 11) What is $18 + 27$?☐ A. -45☐ C. 45☐ B. 9☐ D. 48612) Evaluate $6 - 2(x + 1)$ when $x = 2$.☐ A. 8☐ C. 4☐ B. 0☐ D. 2

1) Solve for x : $-5(x + 2) = 20$

☐ A. $x = -6$

☐ C. $x = 2$

☐ B. $x = -4$

☐ D. $x = 6$

2) Solve: $4x - 9 = -1$ and verify by substituting back.

☐ A. $x = -2$

☐ C. $x = 2$

☐ B. $x = 0$

☐ D. $x = 4$

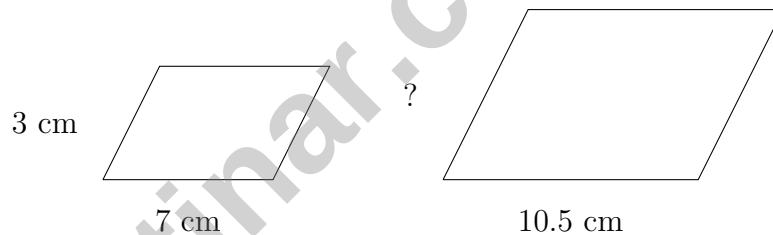
3) A scale drawing uses a scale of 1 cm : 4 m. In the drawing, a wall is 7 cm long. What is the actual length of the wall?

☐ A. 3 m

☐ C. 28 m

☐ B. 11 m

☐ D. 32 m



4)

The trapezoids are similar. Find the height of the larger trapezoid.

☐ A. 3 cm

☐ C. 4.5 cm

☐ B. 4 cm

☐ D. 6 cm

5) A bagel has diameter 4 inches. Approximately, what is its circumference? Use $\pi \approx 3.14$.

☐ A. 6.28 in

☐ C. 25.12 in

☐ B. 12.56 in

☐ D. 50.24 in



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- 6) A circle has a diameter of 10 feet. What is its radius?
- ☐ A. 5 feet ☐ C. 20 feet
☐ B. 10 feet ☐ D. 31.4 feet
- 7) A cylinder has a radius of 2 cm and a height of 9 cm. What is the total surface area?
 Use $\pi \approx 3.14$.
- ☐ A. 88.36 cm^2 ☐ C. 138.16 cm^2
☐ B. 112.6 cm^2 ☐ D. 226.08 cm^2
- 8) Which pair of samples demonstrates a population with both higher center and greater reliability?
- ☐ A. Mean 50, MAD 8 vs. Mean 52, MAD 12 ☐ C. Mean 50, MAD 8 vs. Mean 55, MAD 4
☐ B. Mean 50, MAD 8 vs. Mean 45, MAD 3 ☐ D. Mean 50, MAD 8 vs. Mean 50, MAD 2
- 9) A line graph shows the cost of a movie ticket over 10 years (2014–2024): \$8, \$8.50, \$9, \$9.50, \$10, \$10.25, \$10.50, \$11, \$11.50, \$12. Which year shows the smallest increase from the previous year?
- ☐ A. 2015 (increase of \$0.50) ☐ C. 2019 (increase of \$0.25)
☐ B. 2018 (increase of \$0.50) ☐ D. 2020 (increase of \$0.50)
- 10) A spinner has 10 equally-sized sections. 4 are labeled “Red”, 3 are labeled “Blue”, and 3 are labeled “Yellow”. What is the probability of spinning Blue?
- ☐ A. $\frac{3}{10}$ ☐ C. $\frac{4}{10}$
☐ B. $\frac{1}{3}$ ☐ D. $\frac{3}{7}$



1) What is $\sqrt{225}$?

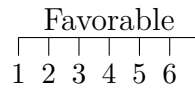
☐ A. 13

☐ C. 15

☐ B. 14

☐ D. 16

2)



A number line shows a uniform model with outcomes $\{1, 2, 3, 4, 5, 6\}$. If the favorable region is $\{2, 3\}$, what is $P(\text{favorable})$?

☐ A. $\frac{1}{2}$

☐ C. $\frac{1}{3}$

☐ B. $\frac{1}{4}$

☐ D. $\frac{2}{5}$

3) An online store deducts a 3% processing fee from seller payments. If a seller receives payment for items totaling \$1,000, how much is deducted as a fee?

☐ A. \$15

☐ C. \$30

☐ B. \$25

☐ D. \$100

4) Maya earns \$200 a week. If she puts 12% of her earnings into a savings account each week, how much does she save weekly?

☐ A. \$12

☐ C. \$24

☐ B. \$20

☐ D. \$30

5) A savings bond worth \$500 with 3% annual compound interest is held for 5 years. Approximately what is the final value?

☐ A. \$575

☐ C. \$580

☐ B. \$579.64

☐ D. \$650



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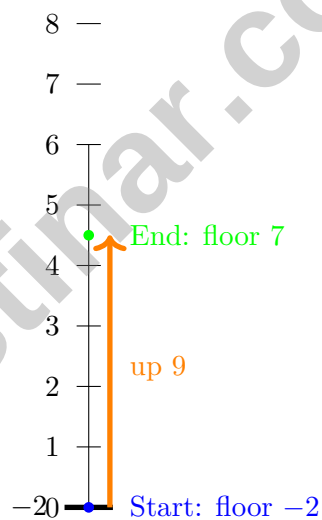
6) A basketball player's scoring average was 18 points per game. After training, it increased to 27 points per game. What is the percent increase?

☐ A. 33.3%☐ C. 66.7%☐ B. 9%☐ D. 50%

7) A comparison of two loans shows: Loan 1 costs \$240 in interest on \$3000 for 2 years, while Loan 2 costs \$360 in interest on \$3000 for 2 years. How much higher is Loan 2's interest rate than Loan 1's?

☐ A. 8%☐ C. 6%☐ B. 4%☐ D. 2%

8) An elevator starts at floor -2 (basement). It goes up 9 floors. What floor is it on?

☐ A. Floor -11 ☐ C. Floor 7☐ B. Floor -7 ☐ D. Floor 11

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.G.1-7.G.5)** Multiply by scale factor: $15 \text{ cm} \times 2 \text{ m/cm} = 30 \text{ m}$.
- 2) **Choice A is correct.** **(7.RP.3)** Percent error = $\frac{|3.5-3.2|}{3.2} \times 100\% = \frac{0.3}{3.2} \times 100\% \approx 9.4\%$.
- 3) **Choice B is correct.** **(7.EE.1-7.EE.2)** Using $-1(4x - 7) = -4x + 7$, or distribute the negative: opposite of $4x$ is $-4x$, opposite of -7 is $+7$.
- 4) **The correct answer is 25.** **(7.NS.1-7.NS.3)** Net change = final balance - initial balance = $-20 - (-45) = -20 + 45 = 25$ dollars. The account increased by 25 dollars (a net deposit of 25).
- 5) **Choice C is correct.** **(7.EE.4b)** $x \geq 1$ includes 1, so a closed circle, with the arrow pointing right toward greater values.
- 6) **Choice D is correct.** **(7.RP.1-7.RP.3)** Multiply: $18 \times 4 = 72$ feet. Student divided instead of multiplied (flipped the operation).
- 7) **Choice D is correct.** **(7.RP.3)** $I = 400 \times 0.025 \times 4 = \40 . Then $A = 400 + 40 = \$440$.
- 8) **Choice C is correct.** **(7.RP.3)** The shaded region is $\frac{60}{100} = 60\%$ of the grid.
- 9) **Choice D is correct.** **(7.RP.3)** Discount amount = $60 - 36 = \$24$. Percent = $(24/60) \times 100 = 40\%$.
- 10) **The correct answer is $\frac{35}{24}$.** **(7.RP.1-7.RP.3)** $\frac{7}{8} \div \frac{3}{5} = \frac{7}{8} \times \frac{5}{3} = \frac{35}{24}$.
- 11) **Choice C is correct.** **(7.NS.1b)** Both numbers are positive, so add them: $18 + 27 = 45$.
- 12) **Choice B is correct.** **(7.EE.1-7.EE.2)** Substitute: $6 - 2(2 + 1) = 6 - 2(3) = 6 - 6 = 0$.
- 13) **Choice B is correct.** **(7.EE.1)** Like terms have the same variable(s) and exponent(s). Both $-5ab$ and $3ab$ have the same variables and exponents.
- 14) **Choice A is correct.** **(7.EE.1-7.EE.2)** Factor out the GCF -3 : $-9m - 12 = -3(3m + 4)$.
- 15) **Choice C is correct.** **(7.G.4-7.G.6)** The correct surface area formula for a rectangular prism is $SA = 2(lw + lh + wh)$, which matches option C.
- 16) **Choice B is correct.** **(7.SP.1-7.SP.4)** A random sample from the entire teenage population avoids limiting to one location or event. The other options miss large portions of the teenage population.
- 17) **Choice B is correct.** **(7.SP.5-7.SP.8)** More trials reduce the effect of random variation and produce a more stable relative frequency.
- 18) **Choice A is correct.** **(7.EE.1-7.EE.2)** Combine: $(5z + 3z) + (3 - 4) = 8z - 1$.
- 19) **Choice A is correct.** **(7.EE.4a)** Bar model shows base \$80 plus additional uniforms at \$15 each. Equation: $15u + 80 = 230$.
- 20) **Choice A is correct.** **(7.EE.4b)** Multiply by 3: $2x - 1 \leq 15$. Add 1: $2x \leq 16$. Divide by 2: $x \leq 8$.
- 21) **The correct answer is C,D.** **(7.SP.1-7.SP.4)** The total amounts are not given, so A and B cannot be determined from the percentages alone. Region Y has 50% indoor and 50% outdoor use, so C is correct. Region Y's outdoor percentage (50%) is higher than Region X's outdoor percentage (40%), so D is correct.
- 22) **Choice A is correct.** **(7.G.1-7.G.5)** The radius of a cone's horizontal cross-section is proportional to the distance from the apex. Using similar triangles: $\frac{r}{5} = \frac{6}{15}$, so $r = 2 \text{ cm}$.
- 23) **Choice B is correct.** **(7.G.1-7.G.5)** Vertical angles are congruent. The opposite angle is also 55° .
- 24) **Choice A is correct.** **(7.G.1-7.G.5)** A translation by $(2, -4)$ adds the vector to each point: $(3, 1) + (2, -4) = (5, -3)$.
- 25) **Choice D is correct.** **(7.RP.1-7.RP.3)** Check: $v = \frac{2}{7}(7) = 2$, $v = \frac{2}{7}(14) = 4$, $v = \frac{2}{7}(28) = 8$. All points match the equation.
- 26) **Choice D is correct.** **(7.RP.1-7.RP.3)** The unit-rate point $(1, 0.4)$ indicates \$0.40 per pound.
- 27) **Choice C is correct.** **(7.RP.3)** Increase: $\frac{15}{100} \times 5000 = 750$. New revenue: $5000 + 750 = \$5750$.
- 28) **Choice C is correct.** **(7.RP.3)** Emergency savings = $8\% \times \$48,000 = 0.08 \times 48000 = \$3,840$.
- 29) **Choice D is correct.** **(7.NS.1-7.NS.3)** Starting at 1 and moving right 3 units represents adding 3, so $1 + 3 = 4$.
- 30) **Choice D is correct.** **(7.NS.1-7.NS.3)** Negative divided by negative is positive. Calculate the magnitude: $36 \div 9 = 4$. Apply sign rule: $(-) \div (-) = (+)$. Thus $-36 \div (-9) = 4$.



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Hi, Smart Reviewer!

◇ The best learning often happens after the test, when you look back and notice what worked and what needs attention. This short, concentrated book gave you three focused Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. ◇

★ **Remember this:** You can use these practice tests as a map. The questions you solved quickly show strengths; the questions you missed show where to train next. ★

Review Routine

- **Sort:** Group mistakes by skill.
- **Reread:** Check whether the question was misunderstood.
- **Resolve:** Do the problem again without looking.
- **Record:** Write the lesson in one sentence.

Grade 7 test-day tip: Review in short focused sessions. Ten careful minutes can be more useful than an hour of rushing.

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

Jay Daie

Your Review Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **3** 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.



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- ✓ The Number System
- ✓ Expressions & Equations
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- ✓ Data Analysis
- ✓ Measurement & Conversions
- ✓ Algebraic Thinking
- ✓ And More!



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