

7 Michigan M STEP

Grade 6 MATH PRACTICE TESTS

7
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



7 Full-Length
Printed Tests



Standards-Aligned
Math Practice



Detailed Answer Keys
and Explanations



Build Confidence.
Achieve Success.



You've
Got
This!



PREPARE
PRACTICE
SUCCEED



PRACTICE
WITH PURPOSE



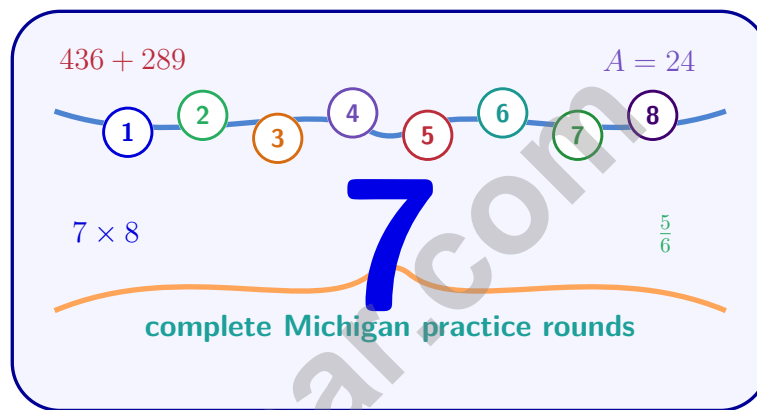
STRENGTHEN
MATH SKILLS



REVIEW, IMPROVE,
AND SUCCEED

7 Michigan M-STEP Grade 6 Math Practice Tests

Standards-Aligned Great Lakes Problem Solving for Michigan Student Test of Educational Progress



Seven complete 40-question Grade 6 practice rounds for M-STEP, built for Great Lakes problem solving 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, Michigan Math Explorer!

Eight focused rounds using Great Lakes problem solving

This book gives you seven full Grade 6 practice tests for M-STEP. Each round uses lake shores, peninsulas, and steady route planning as a fresh mental backdrop while you read closely, choose a smart strategy, show your work, and check whether your answer makes sense.

Your Michigan Practice Promise

Keep your thinking on course: map the facts, select the operation, and check the destination.

Read

Plan

Check

How to Use This Book

A seven-session routine for Great Lakes problem solving

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

Michigan review rhythm: After each round, look for patterns in mistakes and steer the next practice session toward them.



What Is Inside?

Eight M-STEP 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.
Test 7	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. Great lakes problem solving means recognizing the skill even when the next question changes topic, changes format, or asks for an explanation.

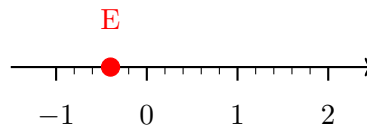


Scan me!
For more practice
& answers

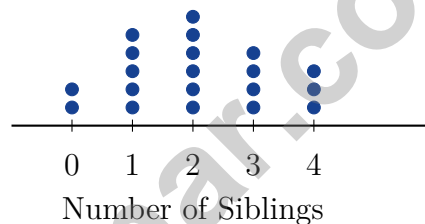
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- 1) The number line below has tick marks at fifths. What is the coordinate of point E?



- A. $-\frac{3}{5}$
 C. $-\frac{1}{5}$
 B. $\frac{1}{5}$
 D. $-\frac{2}{5}$
- 2) A dot plot shows the number of siblings each student has. The distribution is: 0 siblings: 2 students; 1 sibling: 5 students; 2 siblings: 6 students; 3 siblings: 4 students; 4 siblings: 3 students. Which best describes the shape of this distribution?



- A. Symmetric
 C. Skewed left
 B. Skewed right
 D. Bimodal
- 3) A probability line goes from 0 to 1. Where would you place an event with probability $\frac{1}{4}$?
- A. At 0 (impossible).
 C. At $\frac{1}{2}$ (even chance).
 B. Between 0 and $\frac{1}{2}$ (unlikely).
 D. Between $\frac{1}{2}$ and 1 (likely).



- 4) A bank account started with a balance of \$150. After a withdrawal of \$75 and another withdrawal of \$40, what is the final balance?

- 5) A circle graph shows transportation methods for 500 commuters. If 45% drive a car, how many commuters drive a car?

- A. 200 C. 225
 B. 180 D. 250

- 6) A histogram shows test scores with intervals: 60–69 (frequency 3), 70–79 (frequency 8), 80–89 (frequency 6), 90–99 (frequency 2).

What is the total number of students who took the test?

- A. 17 C. 21
 B. 19 D. 24

- 7) A class has 24 students. The ratio of boys to girls is 5 : 3. How many boys are in the class?

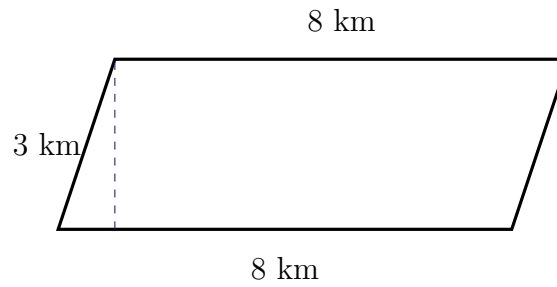
- A. 16 boys C. 20 boys
 B. 9 boys D. 15 boys

- 8) A student is converting 8 feet to inches. He multiplies by 12 to get 96. Is his work correct?

- A. No, he should divide by 12, not multiply. C. No, 8 feet should equal 80 inches.
 B. No, he should multiply by 3 instead of 12. D. Yes, 8 feet = 96 inches.



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9)

What is the area of this parallelogram?

 A. 11 km^2 C. 24 km^2 B. 16 km^2 D. 64 km^2

10) A rectangle has vertices at $(1, 1)$, $(7, 1)$, $(7, 4)$, and $(1, 4)$. What is its perimeter?

 A. 9 units C. 18 units B. 15 units D. 24 units

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

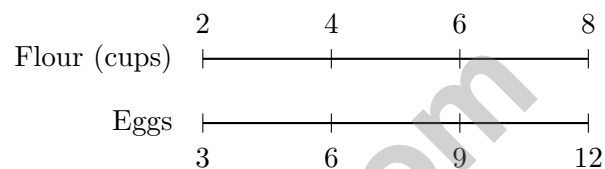
A. $d = 15t$

C. $t = 15d$

B. $d = 15 + t$

D. $d = 15t + 1$

2) A recipe uses 2 cups of flour for every 3 eggs. How many cups of flour are needed for 12 eggs?



A. 4

C. 8

B. 6

D. 10

3) A jar contains red and blue marbles. The ratio of red to blue is 3 : 5. If there are 18 red marbles, how many blue marbles are in the jar?

4) Two people compare budgets. Person A saves 20% of \$800, and Person B saves 40% of \$400. Who saves more?

A. Person A saves more.

C. They save the same amount.

B. Person B saves more.

D. Cannot be determined.



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5) A map shows two different regions using different scales. Region X has a scale of 1 inch = 2 km and is drawn as 5 inches. Region Y has a scale of 1 inch = 1 km and is drawn as 8 inches. Which region represents a larger actual distance?

- A. Region X (10 km) C. Both are equal
 B. Region Y (8 km) D. Insufficient information

6) Compute: $\frac{6}{7} \div \frac{2}{3}$

- A. $\frac{12}{14}$ C. $\frac{14}{18}$
 B. $\frac{9}{7}$ D. $\frac{4}{7}$

7) A classmate subtracts and writes $9.4 - 3.8 = 5.6$. Which statement is true?

- A. The work is correct; 5.6 matches the subtraction.
 B. Decimals cannot be subtracted unless you line up the \$ symbol.
 C. Because $9 > 5$, no borrowing is allowed.
 D. Subtracting decimals always lowers the quotient.

8) What is the least common multiple (LCM) of 6 and 8?

- A. 24 C. 14
 B. 18 D. 48

9) A deep-sea creature lives at an elevation of -5000 meters. A high-altitude bird lives at an elevation of 8000 meters. What is the vertical distance between them?

- A. 3000 meters C. 5000 meters
 B. 13000 meters D. 8000 meters



- 1) The factor tree below shows the GCF of two numbers. Use it to write the factored form of the sum.

$$\text{GCF} = 2 \times 3$$

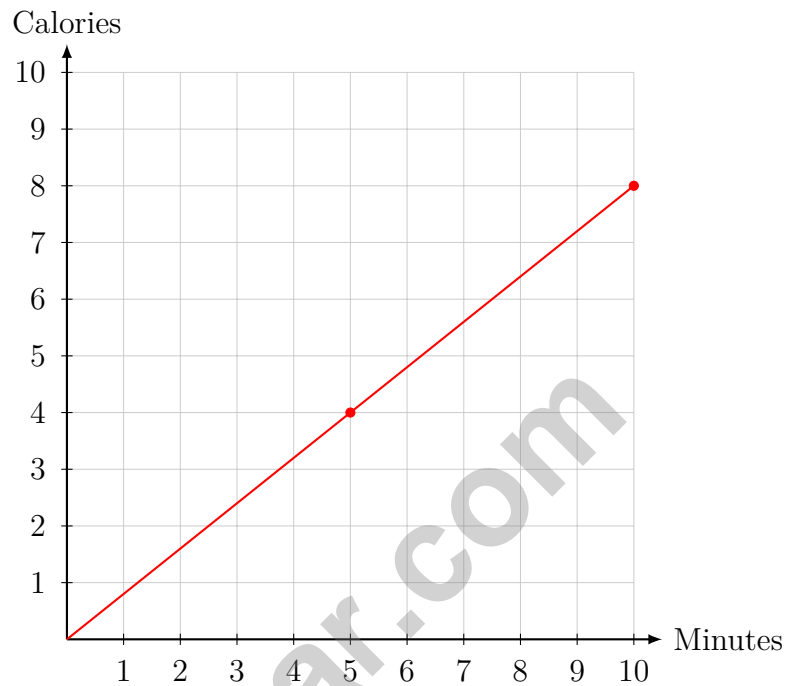
$$2 \quad 3$$

$$\text{First number} \times \text{Second number} = 30 \times 3 \times 4 = 24$$

- A. $6(5 + 4)$
 C. $5(6 + 24)$
- B. $6(5 \times 4)$
 D. $(5 + 4)(2 + 3)$
- 2) Which set of phrases describes equivalent ratios in the same order?
- A. “For every 2 cats there are 5 dogs” and “The ratio is 5 : 2”
 C. “For every 4 red cars there are 6 blue cars” and “The ratio is 3 : 2”
- B. “For every 3 apples there are 7 oranges” and “The ratio is 3 : 7”
 D. “For every 5 boys there are 8 girls” and “The ratio is 8 : 5”



- 3) The graph below shows the relationship between minutes exercised and calories burned.



How many calories are burned per minute?

- 4) A trapezoid has bases of 12 cm and 8 cm with a height of 5 cm. What is the area?



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Michigan M-STEP Practice Test Answer Keys

How to use this Michigan M-STEP 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 Great Lakes problem solving
3. rework the problem before reading the full explanation, using this reminder:
Keep your thinking on course: map the facts, select the operation, and check the destination.

A calm Michigan correction routine turns every missed item into useful practice. After each round, look for patterns in mistakes and steer the next practice session toward them.



Scan me!
For more practice
& answers

Michigan Practice Test Answers and Explanations

Review the seven printed M-STEP tests with steady, aware, and ready to keep navigating habits.

Practice Test 1 Answers and Explanations

- 1) **Choice D is correct.** **(6.NS.C.6c)** Point E is two fifth-marks to the left of 0, which is $-\frac{2}{5}$ or -0.4 .
- 2) **Choice C is correct.** **(6.SP.B.4)** The data peaks around 2 siblings and has a longer tail extending to the left (toward 0 siblings). This is a left-skewed distribution.
- 3) **Choice B is correct.** **(6.NS.B.3)** $\frac{1}{4} = 0.25$, which is less than 0.5, so the event is unlikely.
- 4) **The correct answer is 35.** **(6.EE.A.3)** Balance after two withdrawals: $150 - 75 - 40 = 35$ dollars.
- 5) **Choice C is correct.** **(6.NS.A.1)** 45% of 500 is $0.45 \times 500 = 225$ commuters.
- 6) **Choice B is correct.** **(6.RP.A.3)** Total frequency = $3 + 8 + 6 + 2 = 19$ students.
- 7) **Choice D is correct.** **(6.RP.A.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: $5 \times 3 = 15$.
- 8) **Choice D is correct.** **(6.RP.A.3d)** Converting feet to inches: multiply by 12 (since 1 foot = 12 inches). $8 \times 12 = 96$ inches. The student's process and answer are correct.
- 9) **Choice C is correct.** **(6.G.A.1)** Area = $8 \times 3 = 24$ km².
- 10) **Choice C is correct.** **(6.G.A.3)** Length = $7 - 1 = 6$ units; width = $4 - 1 = 3$ units. Perimeter = $2(6 + 3) = 18$ units.
- 11) **Choice A is correct.** **(6.NS.C.8)** Reflection over the x -axis negates the y -coordinate: $(1, 2) \rightarrow (1, -2)$.
- 12) **Choice A is correct.** **(6.SP.B.5)** Type X range = $35 - 5 = 30$; Type Y range = $30 - 10 = 20$. Type X's larger range indicates more variability in growth.
- 13) **Choice A is correct.** **(6.SP.B.4)** In a standard stem-and-leaf plot with single-digit leaves, stem 3 with leaves 1, 2, 4, 5 correctly represents 31, 32, 34, 35.
- 14) **Choice D is correct.** **(6.EE.B.6)** The bar model shows two parts: n and 8. The total is their sum: $n + 8$.
- 15) **Choice D is correct.** **(6.EE.B.5)** Check: $7 + 8 = 15$ is true. Subtract 8 from both sides.
- 16) **Choice A is correct.** **(6.EE.B.8)** A score ≥ 70 includes 70 and above. Since $69 < 70$, it fails to meet the requirement.
- 17) **Choice C is correct.** **(6.EE.B.8)** "No more than" means "less than or equal to," so the inequality is $x \leq 12$.
- 18) **Choice B is correct.** **(6.EE.C.9)** Total cost equals the daily rate of \$40 times the number of days: $C = 40d$.
- 19) **Choice D is correct.** **(6.G.A.1)** Base: $12 - 2 = 10$ units. Height: $9 - 1 = 8$ units. Area = $\frac{1}{2} \times 10 \times 8 = 40$ square units.
- 20) **The correct answer is $(-4) \times 5 = -20$ (negative times positive is negative); $\frac{-80}{4} = -20$ (negative divided by positive is negative).** **(6.NS.B.3)** Choice A equals -20 because $(-4) \times 5 = -20$. Choice C equals -20 because $\frac{-80}{4} = -20$. The other expressions equal 20, -15 , and 20.
- 21) **Choice B is correct.** **(6.G.A.4)** A rectangular prism with dimensions $2 \times 3 \times 4$ has 6 faces: two opposite faces of size 2×3 , two of size 2×4 , and two of size 3×4 . Choice B lists exactly this composition.
- 22) **Choice C is correct.** **(6.RP.A.3)** Small cups are the 7-part amount. Since $35 \div 7 = 5$, each part is worth 5 cups, so large cups are $5 \times 5 = 25$.
- 23) **Choice C is correct.** **(6.RP.A.3c)** 25% of \$40 is $0.25 \times 40 = \$10$. Sale price is $\$40 - \$10 = \$30$.
- 24) **The correct answer is 64.** **(6.EE.A.1)** $4^3 = 4 \times 4 \times 4 = 64$.
- 25) **The correct answer is 6.** **(6.EE.A.2a)** Twice 3 cups is $2 \times 3 = 6$ cups.
- 26) **Choice B is correct.** **(6.RP.A.3)** Divide by the scale: $32 \div 4 = 8$ inches.
- 27) **Choice B is correct.** **(6.NS.A.1)** If 1 can covers $\frac{2}{3}$ wall, then to cover $\frac{1}{2}$ wall we need $\frac{1}{2} \div \frac{2}{3} = \frac{1}{2} \times \frac{3}{2} = \frac{3}{4}$ can.
- 28) **Choice C is correct.** **(6.NS.C.5)** The difference is $5 - (-15) = 5 + 15 = 20$ degrees.
- 29) **Choice A is correct.** **(6.EE.A.3)** GCF of 15 and 25 is 5. Factor: $15a + 25 = 5(3a + 5)$.



Hi, Math Pilot!

◇ 7 flights done in your math airplane. You have flown through smooth skies and bumpy clouds. You are a real pilot now. ◇

★ **Pilots know:** a good check before takeoff makes a smooth flight. Before each problem, do your check: read, plan, solve, verify. ★

Pilot Skills

- **Pre-Flight:** You read the question carefully.
- **Steering:** You pick the right strategy.
- **Smooth Flight:** You stay calm in long tests.
- **Landing:** You always check your final answer.

Pilot tip: on test day, take off one problem at a time. Trust your training. You earned your wings!

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

Jay Daie

Your Math Pilot

MASTER 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 7 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.



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.



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.



7 FULL-LENGTH
PRINTED TESTS



STANDARDS-
ALIGNED PRACTICE



DETAILED ANSWER
KEYS & EXPLANATIONS