

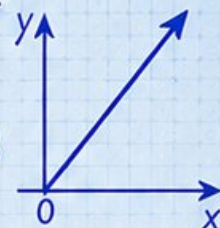
# 3 Michigan M STEP

GRADE  
**6**  
MATH

## PRACTICE TESTS

Standards Aligned Problem Solving  
For Comprehensive Assessment Programs

$$y = 2x + 3$$



$$\frac{3}{5} + \frac{2}{10} = \frac{8}{10} = \frac{4}{5}$$

$$36\% \text{ of } 150 = ?$$



**3** | PRINTED TESTS



**2** | ONLINE TESTS



Build Confidence



Master Key Math Skills



Answer Explanations for Every Question

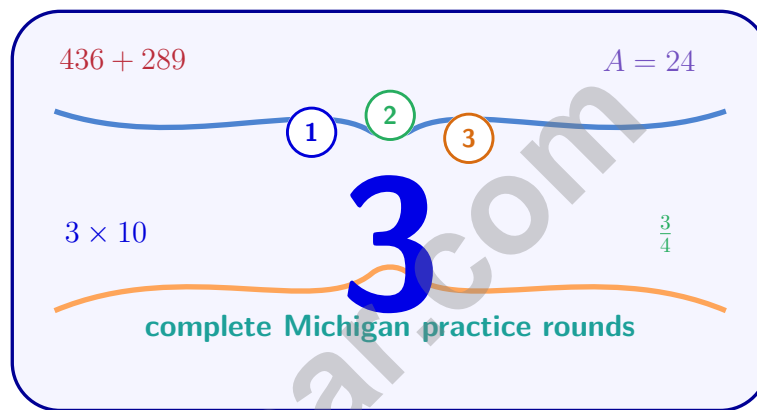


Test-Taking Strategies That Work

USE THESE TWO  
ADDITIONAL ONLINE  
PRACTICE TESTS  
FOR EXTRA REVIEW AFTER  
THE PRINTED TESTS  
IN THIS BOOK.

# 3 Michigan M-STEP Grade 6 Math Practice Tests

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



Three 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!

Three focused rounds using Great Lakes problem solving

This book gives you three 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 three-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?

Three M-STEP tests, 120 questions, and a full review path

| Part         | What You Will Practice  |
|--------------|---|
| Tests 1–2    | Foundation rounds for ratios, rational numbers, operations, and careful reading.                  |
| Test 3       | Final stamina round for expressions, equations, geometry, data, problem models, and mixed review. |
| Answer Pages | Compact keys and explanations that show why each answer works.                                    |

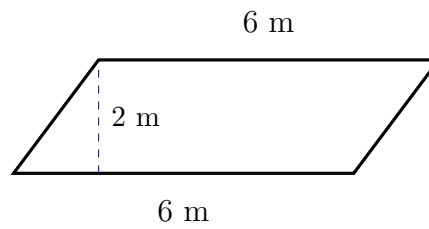
The tests are mixed on purpose. Great lakes problem solving means recognizing the skill even when the next question changes topic, changes format, or asks for an explanation.



Scan me!  
For more practice  
& answers

# Table of Contents

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1)

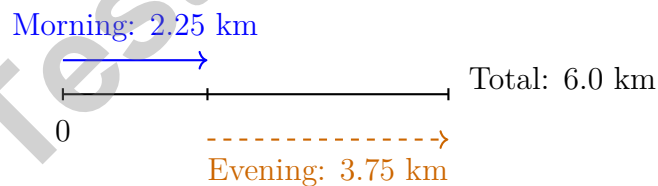
The diagram shows a trapezoid with parallel bases of 6 m and 6 m (equal bases) and a height of 2 m. What is the area?

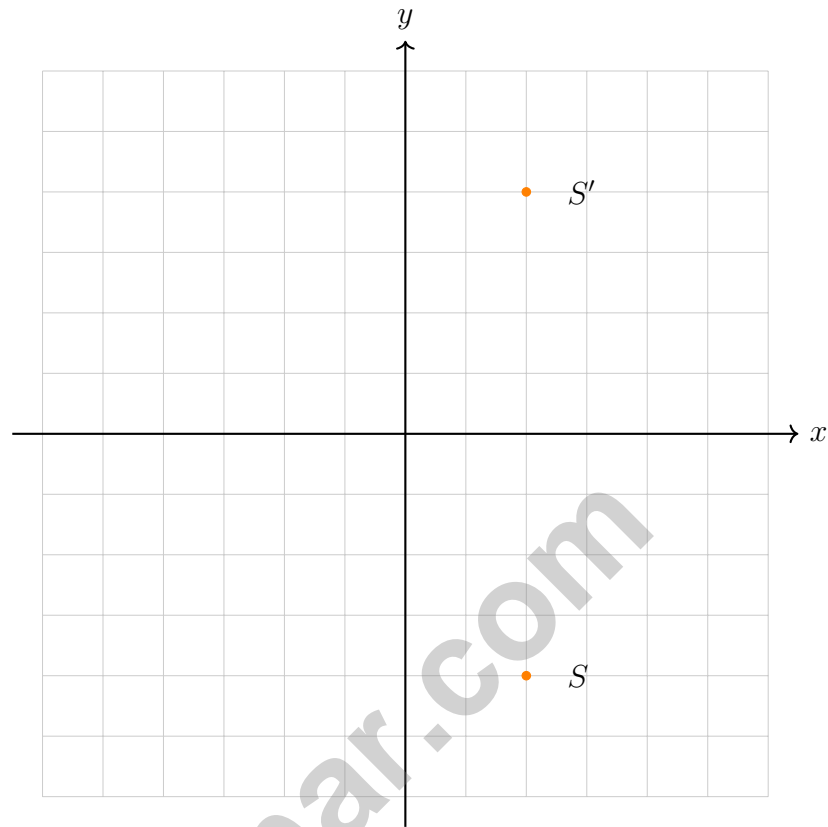
 A.  $12 \text{ m}^2$  C.  $18 \text{ m}^2$  B.  $6 \text{ m}^2$  D.  $24 \text{ m}^2$ 

2) A bakery uses 15 kilograms of flour. Of this, 60% is used for bread. How many kilograms are used for bread?

 A. 6 kg C. 12 kg B. 15 kg D. 9 kg

3) A jogger runs 2.25 km in the morning and 3.75 km in the evening. What is the total distance?

 A. 6.0 km C. 6.5 km B. 5.75 km D. 5.0 km



4)

Point  $S$  is reflected to create point  $S'$ . What is the relationship between the  $x$ -coordinates of  $S$  and  $S'$ ?

- A. They are opposites  
 B. One is zero  
 C. They are swapped  
 D. They are equal

5) A graph shows the relationship between the number of soccer practice hours and the number of goals scored. The points (2, 6) and (5, 15) are on the line.

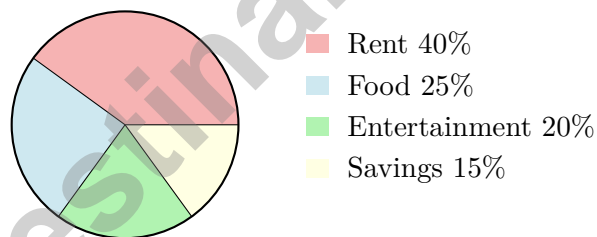
What is the unit rate (goals per practice hour)?

- A. 2 goals per hour  
 B. 6 goals per hour  
 C. 5 goals per hour  
 D. 3 goals per hour



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& answers

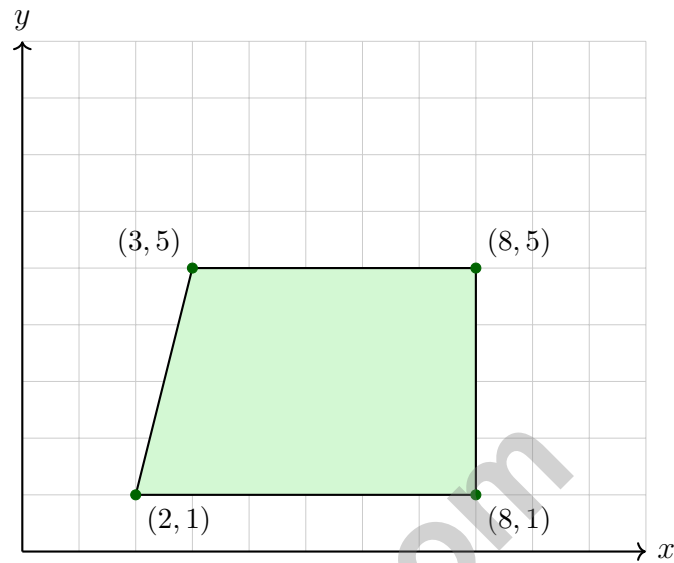
- 6) A basketball player made 18 out of 20 shots. What percent is this?
- A. 18%                       C. 90%
- B. 80%                       D. 95%
- 7) A map has a scale of 1 inch = 10 miles. If two cities are 3.5 inches apart on the map, how far apart are they in reality?
- A. 30 miles                       C. 35 miles
- B. 31.5 miles                       D. 40 miles
- 8) An aquarium holds 20 pints of water. How many gallons is this? (Use 1 gallon = 8 pints.)
- A. 2.5 gallons                       C. 10 gallons
- B. 5 gallons                       D. 1 gallon
- 9) The pie chart shows Diego's monthly budget allocation (total: \$1200).



How much does Diego allocate to Food?

- A. \$300                       C. \$400
- B. \$240                       D. \$480





1)

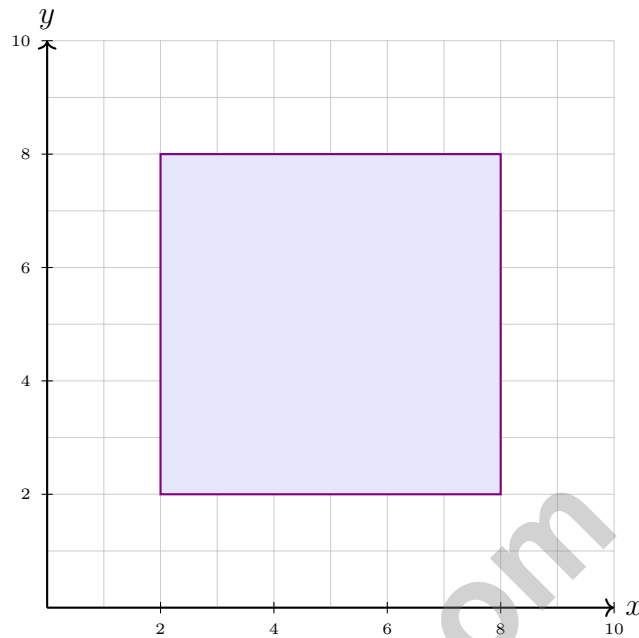
The right-hand side of this trapezoid is the vertical segment from  $(8, 1)$  to  $(8, 5)$ .  
What is its length?

- A. 4 units  
 B. 5 units

- C. 6 units  
 D. 7 units



Scan me!  
For more practice  
& answers



2)

A square garden is plotted with vertices at  $(2, 2)$ ,  $(8, 2)$ ,  $(8, 8)$ , and  $(2, 8)$ . What is its area in square units?

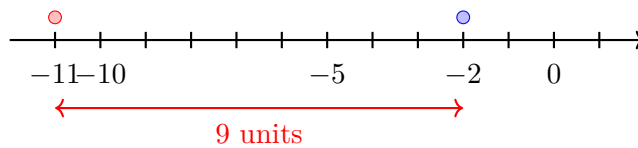
3) A community center asks: “How many times per month do people use the fitness equipment?”

Which describes the relationship between the population and a sample in this scenario?

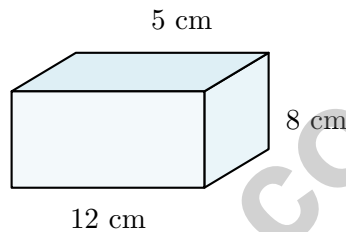
- A. The population is all people in the community; the sample is the people surveyed.
- B. The population is all people surveyed; the sample is all people in the community.
- C. There is no sample in a statistical question.
- D. The population and sample are the same thing.



- 1) On a number line, what integer is 9 units to the left of  $-2$ ?



- A.  $-11$                        C.  $7$   
 B.  $-7$                          D.  $11$



2)

A gift box is 12 cm long, 8 cm wide, and 5 cm high. How many cubic centimeters is its volume?

- A.  $25 \text{ cm}^3$                        C.  $240 \text{ cm}^3$   
 B.  $120 \text{ cm}^3$                        D.  $480 \text{ cm}^3$

- 3) A student is calculating the area of a triangle with base 8 units and height 6 units. The student writes:  $\text{Area} = 8 \times 6 = 48$  square units. What is the student's error?

- A. The student used the wrong base and height.  
 B. The student forgot to divide by 2. The correct area is 24 square units.  
 C. The student should have added, not multiplied.  
 D. The answer is correct; there is no error.





**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.**



## Michigan Practice Test Answers and Explanations

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

### Practice Test 1 Answers and Explanations

- 1) **Choice A is correct.** **(6.G.A.1)** Area =  $\frac{1}{2}(6 + 6) \times 2 = \frac{1}{2}(12)(2) = 12 \text{ m}^2$ .
- 2) **Choice D is correct.** **(6.RP.A.3c)** 60% of 15 =  $0.60 \times 15 = 9 \text{ kg}$ .
- 3) **Choice A is correct.** **(6.NS.B.3)** Add:  $2.25 + 3.75 = 6.0 \text{ km}$ .
- 4) **Choice D is correct.** **(6.NS.C.8)** Point  $S$  is at  $(2, -4)$  and  $S'$  is at  $(2, 4)$ . Both have  $x = 2$ . Reflection across the  $x$ -axis keeps the  $x$ -coordinate the same.
- 5) **Choice D is correct.** **(6.RP.A.3a)** The unit rate is the change in goals divided by the change in hours:  $\frac{15-6}{5-2} = \frac{9}{3} = 3$  goals per hour.
- 6) **Choice C is correct.** **(6.RP.A.3c)**  $\frac{18}{20} = \frac{90}{100} = 90\%$  (multiply numerator and denominator by 5).
- 7) **Choice C is correct.** **(6.RP.A.3)** Scale: 1 inch = 10 miles. Distance:  $3.5 \times 10 = 35 \text{ miles}$ .
- 8) **Choice A is correct.** **(6.RP.A.3d)** Divide:  $20 \div 8 = 2.5 \text{ gallons}$ .
- 9) **Choice A is correct.** **(6.NS.C.7d)** Food is 25% of the budget:  $0.25 \times \$1200 = \$300$ .
- 10) **The correct answer is 4.** **(6.RP.A.3)** Flour is the 5-part amount. Since  $10 \div 5 = 2$ , each part is 2 cups, and sugar is 2 parts:  $2 \times 2 = 4 \text{ cups}$ .
- 11) **Choice C is correct.** **(6.NS.C.7d)** Ratios:  $200/32 = 6.25$ ,  $350/55 \approx 6.36$ ,  $420/65 \approx 6.46$ . The ratio is not constant, so the relationship is not proportional. Larger size does not guarantee proportionality.
- 12) **Choice B is correct.** **(6.EE.C.9)** Remainder:  $100\% - 40\% - 35\% - 15\% = 10\%$  of  $\$360 = 0.10 \times 360 = \$36$ .
- 13) **Choice A is correct.** **(6.RP.A.3)** Distance:  $4 \text{ inches} \times 20 \text{ mi/inch} = 80 \text{ miles}$ . Time:  $80 \div 50 = 1.6 \text{ hours}$ .
- 14) **Choice C is correct.** **(6.NS.A.1)** Change  $3\frac{1}{2}$  to  $\frac{7}{2}$ , then divide by multiplying by  $\frac{4}{3}$ :  $\frac{7}{2} \times \frac{4}{3} = \frac{28}{6}$ , which simplifies to  $\frac{14}{3}$  or  $4\frac{2}{3}$  lengths along the trail.
- 15) **Choice A is correct.** **(6.NS.B.2)**  $8,064 \div 42 = 192$ . Check:  $42 \times 192 = 8,064$ .
- 16) **Choice A is correct.** **(6.NS.B.4)** Multiples of 4: 4, 8, 12, 16, ... Multiples of 6: 6, 12, 18, ... The least common multiple is 12.
- 17) **The correct answer is 60 items per box.** **(6.RP.A.3d)** Divide total items by number of boxes:  $480 \div 8 = 60 \text{ items per box}$ .
- 18) **Choice C is correct.** **(6.NS.B.4)** Find GCF(12, 18). Factors of 12: 1, 2, 3, 4, 6, 12. Factors of 18: 1, 2, 3, 6, 9, 18. GCF is 6. She can make 6 piles with 2 red shirts and 3 blue shirts each.
- 19) **Choice D is correct.** **(6.NS.C.5)** Total is  $(-2) + (+1) + (-1) = -2 + 1 - 1 = -2$  relative to par.
- 20) **Choice C is correct.** **(6.NS.C.7c)** Computing:  $|-11| = 11$ ,  $|-7| = 7$ ,  $|4| = 4$ ,  $|-9| = 9$ . The smallest is 4.
- 21) **The correct answer is 4 : 6 = 2 : 3 (dividing by 2) and 4 : 6 = 8 : 12 (multiplying by 2)..** **(6.RP.A.1)** Nice checking: Choice A works because 4 : 6 simplifies to 2 : 3, and Choice B works because multiplying both parts of 4 : 6 by 2 gives 8 : 12. The other choices change the relationship.
- 22) **Choice C is correct.** **(6.NS.C.6c)** Point V is located 0.7 units to the right of 1, placing it at 1.7.
- 23) **Choice A is correct.** **(6.NS.C.7d)** 3 satisfies  $1.5 < 3 < 5$ .
- 24) **Choice D is correct.** **(6.NS.C.8)** The points share the  $x$ -coordinate, so the distance is the difference of the  $y$ -coordinates:  $|3 - (-5)| = |3 + 5| = 8 \text{ units}$ .
- 25) **Choice A is correct.** **(6.NS.B.3)** When adding two negative integers, add their absolute values and make the result negative:  $|-10| + |-5| = 15$ , so  $-10 + (-5) = -15$ .
- 26) **Choice D is correct.** **(6.NS.B.3)** Starting at  $-50$  and withdrawing (going more negative)  $\$15$ :  $-50 - 15 = -65$ .
- 27) **Choice B is correct.** **(6.EE.A.3)** Two withdrawals of  $\$30$  each:  $180 - 30 - 30 = 180 - 60 = \$120$ .



Scan me!  
For more practice  
& answers

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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 3 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

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# PRACTICE TODAY. SUCCEED TOMORROW!

This book includes 3 full-length Math practice tests and 2 online tests to help Grade 6 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:

- 3 Full-Length Printed Tests
  - 2 Online Practice Tests
-  Detailed Answer Explanations

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### Deeper Understanding

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### Achieve Success

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- ✓ The Number System
- ✓ Expressions & Equations
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- ✓ Percents
- ✓ Statistics & Probability
- ✓ Data Analysis
- ✓ Measurement & Conversions
- ✓ And More!



## 2 ONLINE TESTS

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