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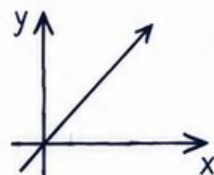
Michigan M STEP

GRADE
7
MATH

PRACTICE TESTS

Standards Aligned
Problem Solving
For Comprehensive
Assessment Programs

$$y = mx + b$$



$$\frac{2x}{3} + \frac{x}{6} = 2$$



$$V = \frac{1}{3} \pi r^2 h$$

**4 PRINTED TESTS****2 ONLINE TESTS**

USE THESE TWO
ADDITIONAL ONLINE
PRACTICE TESTS

FOR EXTRA REVIEW AFTER
THE PRINTED TESTS
IN THIS BOOK.



Build
Confidence



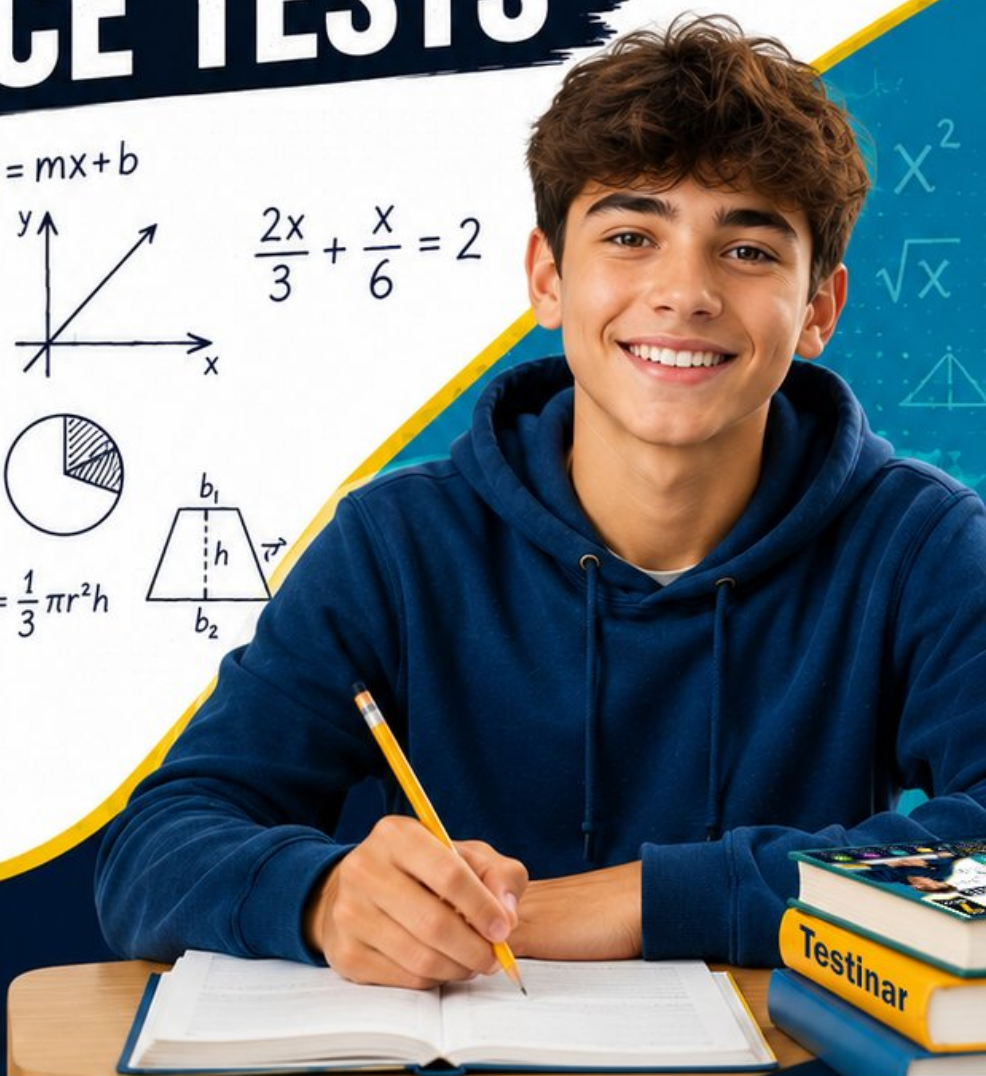
Strengthen
Math Skills



Detailed Answers
& Explanations

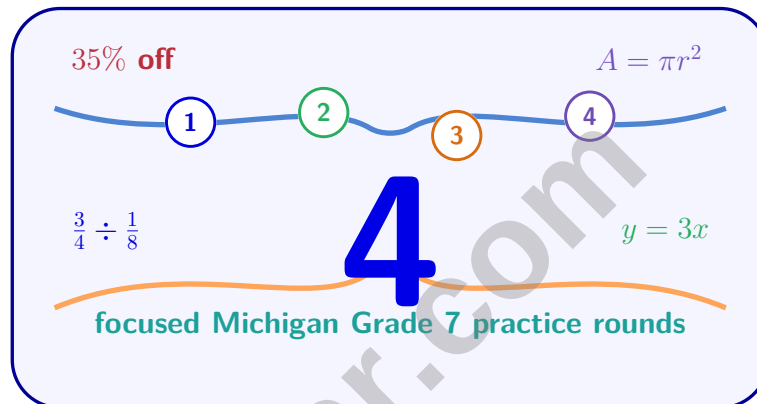


Improve Test
Performance



4 Michigan M STEP Grade 7 Math Practice Tests

Michigan Math Review with Answer Keys and Skill Explanations



Four complete 40-question Grade 7 M STEP 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, Michigan Grade 7 Problem Solver!

Four focused rounds for sharper M STEP math thinking

This book gives you four full Grade 7 M STEP 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 Michigan 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 four-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.

Michigan 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?

Four M STEP tests, 160 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.
Tests 3–4	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

Table of Contents

★ Practice Test 1	_____	15
★ Practice Test 2	_____	30
★ Practice Test 3	_____	45
★ Practice Test 4	_____	60
Practice Test Answer Keys	_____	74
Practice Test Answers and Explanations	_____	77

1) An object travels $\frac{5}{2}$ meters in $\frac{1}{3}$ second. What is the speed in meters per second?

☐ A. $\frac{6}{5}$ m/s

☐ B. $\frac{2}{15}$ m/s

☐ C. $\frac{5}{6}$ m/s

☐ D. $\frac{15}{2}$ m/s

2) A cone with base radius r and height h is cut horizontally at height $\frac{h}{3}$ from the base. The radius of the circular cross-section is:

☐ A. $\frac{r}{3}$

☐ B. $\frac{2r}{3}$

☐ C. $\frac{r}{2}$

☐ D. r

3) Two similar figures have a scale factor of 3 : 4. If the smaller figure has a side length of 9 cm, what is the length of the corresponding side in the larger figure?

☐ A. 6.75 cm

☐ B. 12 cm

☐ C. 13.5 cm

☐ D. 27 cm

4) A student compared two datasets with the same mean of 50 and concluded, "Dataset A is better because it has a larger range." Is the student correct?

☐ A. Yes, larger range always means better data quality☐ B. No, larger range indicates more variability, not quality☐ C. The ranges must be equal if means are equal☐ D. Cannot judge without sample sizes

5) A stem-and-leaf plot shows test scores:

Stem 6: Leaves 5, 8

Stem 7: Leaves 2, 4, 7, 9

Stem 8: Leaves 1, 3, 5, 6

Stem 9: Leaves 0, 2

How many students scored in the 80s?

☐ A. 2 students

☐ B. 3 students

☐ C. 4 students

☐ D. 5 students



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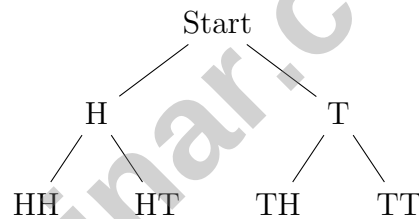
- 6) A six-sided die shows the numbers 1, 1, 2, 3, 3, 3 on its faces. What is the probability of rolling a 1?

☐ A. $\frac{1}{6}$
☐ B. $\frac{2}{5}$

☐ C. $\frac{2}{6}$
☐ D. $\frac{1}{2}$

- 7) A business has a loss of \$55 (represented as -55). To break even, what signed number must be added to the loss?

- 8) Two coins are flipped. Which tree diagram shows all possible outcomes?



☐ A. 2 outcomes only
☐ B. 3 outcomes

☐ C. 4 outcomes
☐ D. 8 outcomes

- 9) Two dot plots show monthly snowfall (in inches) for Mountain Town A and B. Town A: 2, 4, 4, 6, 6, 6, 6, 8, 10. Town B: 0, 1, 5, 8, 12, 14. The town council needs predictable snow for budget planning. Which town's snowfall is more predictable?

☐ A. Town A (data clusters at 4–8 inches)
☐ B. Town B (wider range allows better diversity)

☐ C. Town A's range (8 inches) is smaller, but Town B is more predictable due to higher peak values
☐ D. Town B (extreme values of 0 and 14 are more informative for planning)



- 10) A student conducted a survey of 240 students about their favorite lunch. The results:

Choice	Pizza	Burger	Salad	Pasta
Count	84	72	36	48

Based on experimental data, what is the probability a student chooses either pizza or pasta?

- ☐ A. $\frac{48}{240}$
☐ C. $\frac{132}{240}$
- ☐ B. $\frac{84}{240}$
☐ D. $\frac{156}{240}$
- 11) A student has a $\frac{2}{3}$ probability of passing math and a $\frac{3}{4}$ probability of passing history. Assuming independence, what is the probability of passing EXACTLY ONE of these two subjects?

- ☐ A. $\frac{1}{2}$
☐ C. $\frac{7}{12}$
- ☐ B. $\frac{5}{12}$
☐ D. $\frac{11}{12}$

- 12) The stem-and-leaf plot below shows test scores.

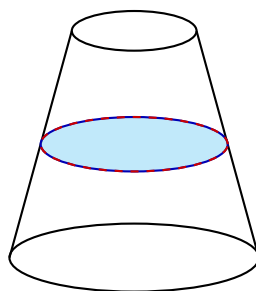
Stem	Leaves
4	2, 6, 8
5	1, 3, 7, 9
6	0, 5, 5, 8
7	2, 4, 6

What is the minimum score?

- ☐ A. 42
☐ C. 40
- ☐ B. 41
☐ D. 48



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1) horizontal circular slice

A truncated cone (frustum) is sliced horizontally. What is the shape of the cross-section?

- ☐ A. Circle
☐ B. Ellipse

- ☐ C. Rectangle
☐ D. Annulus (ring)

Equivalence Table

Form 1	Form 2	Value
$x - 0.25x$	$0.75x$	\$60

2)

Using the equivalence table, if both forms equal \$60, what is x ?

- ☐ A. $x = 45$
☐ B. $x = 75$

- ☐ C. $x = 80$
☐ D. $x = 100$

3) What is -4×0.25 ?

- ☐ A. -2
☐ B. -1

- ☐ C. 1
☐ D. 4.25



- 4) A family's monthly expenses total \$2,500. If their monthly income is \$3,000, what percentage of their income do they spend?

- 5) Complete the ratio table for a proportional relationship:

x	2	4	6	8
y	5	10	y_3	20

What is y_3 ?

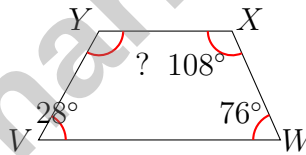
☐ A. 12

☐ C. 14

☐ B. 13

☐ D. 15

6)



What is the missing angle measure in the quadrilateral?

☐ A. 108°

☐ C. 148°

☐ B. 128°

☐ D. 168°



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1) In a class of 25 students, 15 play a sport. What percent of the students play a sport?

☐ A. 25%

☐ C. 50%

☐ B. 40%

☐ D. 60%

2) A dot plot shows customer wait times (in minutes) at two restaurants. Restaurant X: 3, 4, 4, 5, 5, 5, 6, 6, 7 (minutes); Restaurant Y: 2, 5, 8, 10, 12, 15 (minutes). Which restaurant has more predictable wait times?

☐ A. Restaurant X (clustered around 5 minutes)

☐ C. Both restaurants have equally predictable times

☐ B. Restaurant Y (varies from 2 to 15 minutes)

☐ D. Restaurant Y is always faster

3) A composite figure consists of a semicircle (diameter 10 inches) placed on top of a rectangle (10 inches $\times$ 8 inches). What is the total area? (Use $\pi \approx 3.14$.)

☐ A. 80 in²

☐ C. 119.25 in²

☐ B. 99.25 in²

☐ D. 159.25 in²

4) A rectangular prism has a volume of 720 in³. The base is a square with side length 12 inches. What is the height?

☐ A. 5 in

☐ C. 12 in

☐ B. 6 in

☐ D. 60 in

5) A circle has a diameter of $\frac{30}{7}$ meters. What is its radius?

☐ A. $\frac{15}{7}$ meters

☐ C. $\frac{60}{7}$ meters

☐ B. $\frac{30}{7}$ meters

☐ D. 7 meters



6) A triangle is being constructed with two known angles of 38° and 67° . How many different triangles can be formed by varying the side opposite one of these angles?

- ☐ A. 0 (impossible) ☐ C. 2 (two possibilities)
☐ B. 1 (unique) ☐ D. Infinitely many

7) Identify which term is not a like term with $3x$.

- ☐ A. $7x$ ☐ C. x
☐ B. $-2x$ ☐ D. $3x^2$

8)

Input-Output Table

x	y
1	5
2	8
3	11

What is y in terms of x ?

- ☐ A. $y = 3x - 2$ ☐ C. $y = 3x + 2$
☐ B. $y = 2x + 3$ ☐ D. $y = x + 4$

9) What is the GCF of $6xy$ and $9y$?

- ☐ A. $3y$ ☐ C. $9y$
☐ B. $6y$ ☐ D. $3xy$



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Michigan M STEP 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 Michigan M STEP 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) Unit rate = $\frac{5/2}{1/3} = \frac{5}{2} \times 3 = \frac{15}{2}$ m/s.
- 2) **Choice B is correct.** (7.G.1-7.G.5) The cut is $\frac{2h}{3}$ from the apex. Using similar cones: $\frac{r_{\text{cross}}}{2h/3} = \frac{r}{h}$, so $r_{\text{cross}} = \frac{2r}{3}$.
- 3) **Choice B is correct.** (7.G.1-7.G.5) If the scale factor is 3 : 4, then $\frac{\text{smaller}}{\text{larger}} = \frac{3}{4}$. So $\frac{9}{\text{larger}} = \frac{3}{4}$, giving larger = $9 \times \frac{4}{3} = 12$ cm.
- 4) **Choice B is correct.** (7.SP.1-7.SP.4) The student confused range (a measure of spread) with quality. Larger range means data is more spread out, indicating greater variability. More variability does not equal better; it depends on context.
- 5) **Choice C is correct.** (7.SP.1-7.SP.4) Stem 8 has leaves 1, 3, 5, 6, representing scores 81, 83, 85, 86. That is 4 students in the 80s.
- 6) **Choice C is correct.** (7.SP.5-7.SP.8) Faces showing 1: 2 out of 6. $P(\text{rolling } 1) = \frac{2}{6} = \frac{1}{3}$.
- 7) **The correct answer is 55.** (7.NS.1-7.NS.3) To cancel out the loss of -55, you add its opposite, which is +55. Then $-55 + 55 = 0$ (break even).
- 8) **Choice C is correct.** (7.SP.5-7.SP.8) The tree shows all branches: HH, HT, TH, TT. That is 4 equally likely outcomes.
- 9) **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.
- 10) **Choice C is correct.** (7.SP.6) Pizza: 84 students; Pasta: 48 students. Combined: $84 + 48 = 132$ out of 240 total.
- 11) **Choice B is correct.** (7.SP.5-7.SP.8) Pass math AND fail history: $\frac{2}{3} \cdot \frac{1}{4} = \frac{2}{12}$. Fail math AND pass history: $\frac{1}{3} \cdot \frac{3}{4} = \frac{3}{12}$. Total: $\frac{2}{12} + \frac{3}{12} = \frac{5}{12}$.
- 12) **Choice A is correct.** (7.SP.1-7.SP.4) The smallest stem is 4 with the smallest leaf 2, giving 42.
- 13) **Choice A is correct.** (7.G.4-7.G.6) Large rectangle: $20 \times 15 = 300 \text{ m}^2$. Three removed sections: $3 \times (3 \times 2) = 18 \text{ m}^2$. Remaining: $300 - 18 = 282 \text{ m}^2$.
- 14) **Choice A is correct.** (7.G.4-7.G.6) $1 \text{ m} = 100 \text{ cm}$, so $1 \text{ m}^3 = (100)^3 = 1,000,000 \text{ cm}^3 = 10^6 \text{ cm}^3$. Thus $2 \text{ m}^3 = 2 \times 10^6 \text{ cm}^3$.
- 15) **The correct answer is 2.** (7.NS.2) $(-2) \times 3 = -6$. Then $(-6) \times (-\frac{1}{3}) = \frac{6}{3} = 2$. Two negatives give positive.
- 16) **Choice C is correct.** (7.G.4-7.G.6) A diameter is a chord that passes through the center. All diameters are chords.
- 17) **Choice B is correct.** (7.G.1-7.G.5) Given three specific side lengths that satisfy the Triangle Inequality, exactly one unique triangle (up to congruence) can be formed. In fact, this is a right triangle because $6^2 + 8^2 = 10^2$.
- 18) **The correct answer is \$120.** (7.EE.1-7.EE.2) Both $200 - 0.4(200)$ and $200(1 - 0.4)$ simplify to $200(0.6) = 120$. A 40% discount leaves 60% of the original price.
- 19) **Choice B is correct.** (7.SP.5-7.SP.8) Flipping 10 heads in a row has a very small probability ($\frac{1}{1024} \approx 0.001$) but is possible. Rolling a 7 on a standard die is impossible (probability = 0).
- 20) **The correct answer is A,D.** (7.RP.1-7.RP.3) A and D are unit rates because each gives a price per single unit of weight. Option B is a distance, and option C is a total count.
- 21) **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 estimates due to random chance. The true population proportion is likely near these values (around 40%), but exact values vary.
- 22) **Choice D is correct.** (7.NS.1-7.NS.3) $3 - (-3) = 3 + 3 = 6$.
- 23) **Choice D is correct.** (7.RP.1-7.RP.3) Multiply each dimension by the scale factor: $3 \times 8 = 24$ feet and $2.5 \times 8 = 20$ feet.
- 24) **Choice D is correct.** (7.RP.3) A 20% increase of \$40 is $0.20 \times 40 = 8$ dollars.
- 25) **Choice C is correct.** (7.SP.1-7.SP.4) 15% of 320 = $0.15 \times 320 = 48$ households.
- 26) **Choice D is correct.** (7.RP.1-7.RP.3) The unit-rate point is (1, 0.6), indicating \$0.60 per gallon.
- 27) **Choice D is correct.** (7.RP.1-7.RP.3) Substitute into $y = -2x$: when $x = 1$, $y = -2(1) = -2$. Point (1, -2) is on the line.



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Hi, Calm Solver!

◇ This carefully paced book gave you four steady Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. A calm mind can see choices more clearly. That matters in Grade 7, where one problem may have several possible entry points. ◇

★ **Remember this:** You practiced building calm by doing full tests. Each completed page is rehearsal for staying steady when the real test feels serious. ★

Calm-Test Moves

- **Pause:** Give your brain one quiet second.
- **Choose:** Pick the first useful step.
- **Continue:** Do not demand perfection immediately.
- **Check:** Use review time wisely.

Grade 7 test-day tip: If you feel rushed, slow your reading for one sentence. Clear reading saves time.

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

Jay Daie

Your Calm-Test Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **4** 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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2 Online Practice Tests

 Detailed Answers & Explanations



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Give your child the tools to build strong math skills, confidence, and a positive attitude toward learning.

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Strengthen Math Skills

Develop key math concepts and problem solving abilities.



Improve Understanding

Learn with clear explanations and step-by-step solutions.



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Familiarize with test formats and improve accuracy and speed.



Boost Performance

Apply your knowledge and achieve your best score!

TOPICS COVERED

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



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