

8

Michigan

M STEP

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



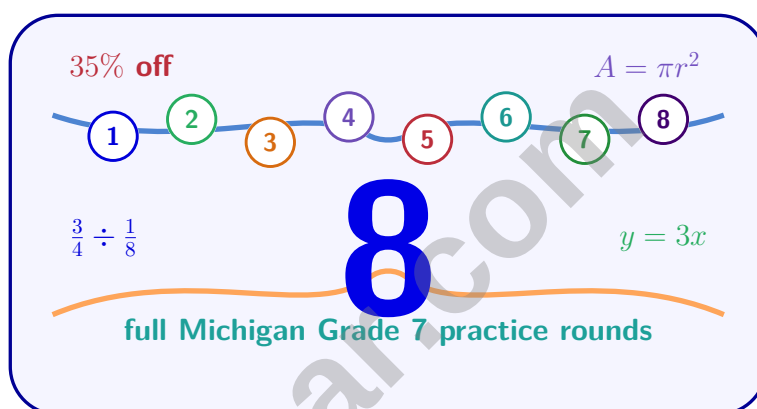
THINK SMARTER



BE TEST-READY

8 Michigan M STEP Grade 7 Math Practice Tests

A reliable plan for Michigan Grade 7 expressions, equations, inequalities, geometry, surface area, volume, and probability



Eight 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!

Eight focused rounds for sharper M STEP math thinking

This book gives you eight 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

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.

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?

Eight M STEP 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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& answers

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1) If a number is positive, its opposite is:

☐ A. Negative

☐ B. Positive

☐ C. Zero

☐ D. The same magnitude doubled

2) What is $\frac{3}{4} \div \frac{1}{2}$?

☐ A. $\frac{3}{8}$

☐ B. $\frac{2}{3}$

☐ C. $\frac{3}{2}$

☐ D. 2

3) Convert $\frac{13}{20}$ to a decimal.

☐ A. 0.13

☐ B. 0.23

☐ C. 0.65

☐ D. 0.85

4) A recipe halves a value from $\frac{9}{8}$ cups. The result is multiplied by 4 to scale up. How much is obtained?

☐ A. $2\frac{1}{4}$ cups

☐ B. $4\frac{1}{2}$ cups

☐ C. $\frac{9}{16}$ cups

☐ D. $1\frac{1}{8}$ cups

5) A student writes: $0.000789 = 7.89 \times 10^{-3}$. Is this correct?

☐ A. Yes, it is correct.

☐ B. No; the exponent should be -4 .

☐ C. No; the coefficient should be 78.9.

☐ D. No; the answer should be 7.89×10^4 .

6) Which expression simplifies to $8z - 1$?

☐ A. $(5z + 3) + (3z - 4)$

☐ B. $(6z + 2) - (2z - 3)$

☐ C. $(10z - 5) - (2z + 4)$

☐ D. $(7z + 3) + (z + 4)$



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7) Solve for x : $9(x - 1) = 45$

☐ A. $x = 4$

☐ C. $x = 6$

☐ B. $x = 5$

☐ D. $x = 7$

8) Solve: $4x + 5 = 21$

☐ A. $x = 2$

☐ C. $x = 6$

☐ B. $x = 4$

☐ D. $x = 8$

9) If two similar rectangles have areas of 12 square cm and 48 square cm, what is the scale factor from the smaller to the larger rectangle?

☐ A. 2

☐ C. 2.45

☐ B. 4

☐ D. $\sqrt{12}$

10) A student scores -3 points for each incorrect answer. If the student has 6 incorrect answers, what is the total point deduction?

☐ A. -18 points

☐ C. 3 points

☐ B. -3 points

☐ D. 18 points

11) Which factorization shows why $6x - 9 = 3(2x - 3)$?

☐ A. The GCF of $6x$ and 9 is 3

☐ D. We subtract the smaller from the larger

☐ B. 6 and 9 are both divisible by 2

☐ C. $2x$ is a common term

12) What is the value of $(-2)^3$?

☐ A. 6

☐ C. 8

☐ B. -8

☐ D. 9



- 13) A student is comparing two equations written by classmates for the same problem: “An online store charges \$6 per item plus \$3.50 shipping.” Student A writes: $T = 6n + 3.50$. Student B writes: $T = 3.50 + 6n$. Which statement is true?

- ☐ A. Only Student A is correct. ☐ D. Neither is correct; the answer is $T = 6(n + 3.50)$.
- ☐ B. Only Student B is correct.
- ☐ C. Both are correct because addition is commutative.

- 14) Which value of x satisfies $4x + 2 = 18$?

- ☐ A. $x = 2$ ☐ C. $x = 5$
- ☐ B. $x = 4$ ☐ D. $x = 8$

- 15) A bank account earns 3% annual interest on a balance of \$1 000. How much interest will the account earn in one year?

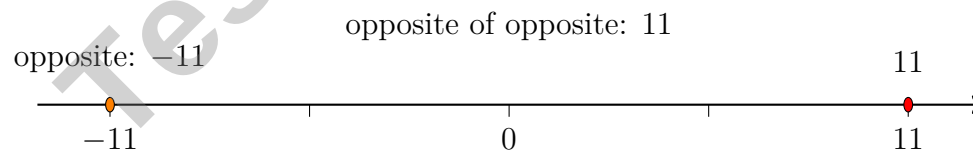
- 16) A probability model is used to predict tomorrow’s weather: $P(\text{sunny}) = 0.55$, $P(\text{cloudy}) = 0.30$, $P(\text{rainy}) = 0.15$. Which statement is false?

- ☐ A. This is a valid non-uniform probability model. ☐ C. All probabilities sum to 1.
- ☐ B. The most likely outcome is sunny. ☐ D. Rainy is the least likely outcome, so it has probability 0.



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- 1) A museum surveyed 105 visitors and found 35 were children. The museum expects 3150 visitors this month. About how many are expected to be children?
- ☐ A. 700 ☐ C. 1050
☐ B. 875 ☐ D. 1225
- 2) A recipe uses 2.25 cups of sugar. If the recipe is doubled, how much sugar is needed?
- ☐ A. 2.25 cups ☐ C. 4.5 cups
☐ B. 3.25 cups ☐ D. 6.75 cups
- 3) Which inequality represents “a number decreased by 7 is less than or equal to 12”?
- ☐ A. $n - 7 \leq 12$ ☐ C. $n + 7 \leq 12$
☐ B. $7 - n \leq 12$ ☐ D. $n \leq 19$
- 4) Two similar quadrilaterals have a scale factor of $\frac{2}{5}$. If the larger quadrilateral has a perimeter of 100 cm, what is the perimeter of the smaller quadrilateral?
- ☐ A. 30 cm ☐ C. 50 cm
☐ B. 40 cm ☐ D. 80 cm
- 5) What is the opposite of the opposite of 11?



- ☐ A. -11 ☐ C. 0
☐ B. 22 ☐ D. 11



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6)

Spin Result	Heads	Tails	Total
Frequency	156	144	300

A coin is flipped 300 times. Based on the simulation, what is the estimated probability of getting tails?

☐ A. 0.44☐ C. 0.50☐ B. 0.48☐ D. 0.52

7) A box plot for test scores shows: minimum = 55, $Q1 = 70$, median = 80, $Q3 = 88$, maximum = 98. About what percentage of students scored between 70 and 88?

☐ A. 25%☐ C. 75%☐ B. 50%☐ D. 100%

8) A deck of cards has 52 cards. What is the probability of drawing a face card (Jack, Queen, or King) from a standard deck?

☐ A. $\frac{12}{52}$ ☐ C. $\frac{4}{13}$ ☐ B. $\frac{2}{13}$ ☐ D. $\frac{1}{4}$

9) An organized list shows all outcomes when drawing one tile from {M, A, T} and one from {1, 2, 3, 4}. How many ordered pairs should the complete list have?

M1, M2, M3, M4, A1, A2, A3, A4, T1, T2, T3, T4

☐ A. 7 pairs☐ C. 12 pairs☐ B. 9 pairs☐ D. 16 pairs

1) A survey shows there is a 20% chance that a student brings lunch to school. What is this probability as a simplified fraction?

- ☐ A. $\frac{20}{100}$
☐ B. $\frac{1}{5}$

- ☐ C. $\frac{1}{20}$
☐ D. $\frac{20}{80}$

2) Solve: $2(x + 4) = 16$

- ☐ A. $x = 4$
☐ B. $x = 6$

- ☐ C. $x = 8$
☐ D. $x = 10$

3) Two spinners, each with sections A, B, C in equal parts, are spun. How many outcomes are in the sample space?

- ☐ A. 3
☐ B. 6

- ☐ C. 9
☐ D. 12

4) A student created a stem-and-leaf plot of plant heights (cm):

Stem	Leaves
8	2, 5, 9
9	1, 4, 6, 8
10	0, 3, 5, 7

A plant with height 94 cm was accidentally recorded as 49 cm. After correction, what is the new maximum?

- ☐ A. 94
☐ B. 107

- ☐ C. 98
☐ D. 105



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5) Expand: $2(x + 3 + 4)$

☐ A. $2x + 6$

☐ C. $6x + 7$

☐ B. $2x + 14$

☐ D. $x + 7$

6) A model railroad layout has a scale of 1 : 160. If a real railroad track is 50 meters long, how long should the model track be in centimeters?

7) A student computed: $I = 600 \times 0.04 \times 2 = 4.8$. What mistake did she make?

☐ A. She forgot to convert the percentage to a decimal☐ C. She forgot the principal amount☐ B. She computed correctly; no error was made☐ D. She placed the decimal incorrectly in her answer

8) A store offers a 32% discount on a pair of jeans originally priced at \$75. What is the sale price?

9) What is $-8 - (-2)$?

☐ A. -10 (if you add both numbers without flipping the sign)☐ C. -4 (if you forget to apply the rule)☐ B. 6 (if you ignore the leading negative)☐ D. -6 (correct: $-8 + 2$)

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 A is correct.** (7.NS.1-7.NS.3) The opposite of any positive number is its negative. For example, the opposite of +7 is -7.
- 2) **Choice C is correct.** (7.NS.1-7.NS.3) Multiply by the reciprocal: $\frac{3}{4} \div \frac{1}{2} = \frac{3}{4} \times \frac{2}{1} = \frac{6}{4} = \frac{3}{2}$.
- 3) **Choice C is correct.** (7.NS.2d) Divide $13 \div 20 = 0.65$. The denominator $20 = 2^2 \times 5$ produces a terminating decimal.
- 4) **Choice A is correct.** (7.NS.1-7.NS.3) Halved: $\frac{1}{2} \times \frac{9}{8} = \frac{9}{16}$ cups. Scaled by 4: $4 \times \frac{9}{16} = \frac{36}{16} = \frac{9}{4} = 2\frac{1}{4}$ cups.
- 5) **Choice B is correct.** (7.NS.1-7.NS.3) Moving the decimal 4 places right: $0.000789 \rightarrow 7.89$. Correct answer is 7.89×10^{-4} , not -3.
- 6) **Choice A is correct.** (7.EE.1-7.EE.2) Combine: $(5z + 3z) + (3 - 4) = 8z - 1$.
- 7) **Choice C is correct.** (7.EE.4a) Distribute: $9x - 9 = 45$. Add 9: $9x = 54$. Divide by 9: $x = 6$.
- 8) **Choice B is correct.** (7.EE.3-7.EE.4) Subtract 5: $4x = 16$. Divide by 4: $x = 4$.
- 9) **Choice A is correct.** (7.G.1-7.G.5) The area ratio is $\frac{48}{12} = 4$. Since area scales by (scale factor)², we have (scale factor)² = 4, so scale factor = 2.
- 10) **Choice A is correct.** (7.NS.1-7.NS.3) Deduction: $-3 \times 6 = -18$ points.
- 11) **Choice A is correct.** (7.EE.1-7.EE.2) gcd(6, 9) = 3, so $6x - 9 = 3(2x - 3)$ by factoring out the GCF.
- 12) **Choice B is correct.** (7.EE.1-7.EE.2) An odd exponent preserves the sign of the base: $(-2)^3 = (-2) \cdot (-2) \cdot (-2) = -8$.
- 13) **Choice C is correct.** (7.EE.4a) Although both forms are mathematically equivalent, in word-problem context, writing the fixed fee first ($3.50 + 6n$) is often clearer.
- 14) **Choice B is correct.** (7.EE.3-7.EE.4) Subtract 2: $4x = 16$. Divide by 4: $x = 4$.
- 15) **The correct answer is \$30.** (7.RP.3) Interest earned: $0.03 \times 1000 = \$30$.
- 16) **Choice D is correct.** (7.SP.5-7.SP.8) Rainy has probability $0.15 \neq 0$. It is the least likely, but not impossible. The others are correct.
- 17) **Choice D is correct.** (7.RP.3) Commission = commission rate $\times$ sales. Since $8000 = 0.02 \times \text{sales}$, $\text{sales} = 8000 \div 0.02 = \$400,000$.
- 18) **Choice A is correct.** (7.G.4-7.G.6) Square: $15 \times 15 = 225 \text{ cm}^2$. Notch: $4 \times 3 = 12 \text{ cm}^2$. Hole: $3.14 \times 4 = 12.56 \text{ cm}^2$. Remaining: $225 - 12 - 12.56 = 200.44 \text{ cm}^2$.
- 19) **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: $217.35 - 210 = 7.35$.
- 20) **Choice D is correct.** (7.RP.1-7.RP.3) Proportion: $\frac{1}{0.62} = \frac{300}{x}$. So $x = 300 \times 0.62 = 186$ miles.
- 21) **The correct answer is $3\frac{1}{2}$.** (7.NS.1-7.NS.3) Common denominator 6: $6\frac{2}{6} - 2\frac{5}{6} = 5\frac{8}{6} - 2\frac{5}{6} = 3\frac{3}{6} = 3\frac{1}{2}$.
- 22) **The correct answer is A,C.** (7.RP.3) Automation (A) ensures consistent saving without temptation, and increasing income (C) provides more funds to allocate to goals. Options B and D actively reduce savings, and E overlooks the powerful effect of compound growth over time.
- 23) **Choice C is correct.** (7.G.1-7.G.5) A quadrilateral's angles sum to 360° . The known angles add to $39^\circ + 141^\circ = 180^\circ$, so the two missing angles must add to 180° .
- 24) **Choice A is correct.** (7.G.1-7.G.5) An equilateral triangle has all sides and all angles equal. Since the angle sum is 180° and all three angles are equal, each angle is $180^\circ \div 3 = 60^\circ$.
- 25) **Choice B is correct.** (7.G.4-7.G.6) A radius has one endpoint at the center and one on the circle, not both on the circle, so it is not a chord.
- 26) **Choice B is correct.** (7.SP.5-7.SP.8) $60\% = \frac{60}{100} = 0.6$.
- 27) **Choice B is correct.** (7.SP.1-7.SP.4) Set up the proportion: $\frac{18}{50} = \frac{x}{800}$. Solve: $x = \frac{18 \times 800}{50} = 288$.
- 28) **Choice D is correct.** (7.RP.1-7.RP.3) From the table, $\frac{1}{2}$ page in $\frac{1}{6}$ hour gives unit rate $\frac{1/2}{1/6} = \frac{1}{2} \times 6 = 3$ pages per hour.
- 29) **Choice D is correct.** (7.RP.1-7.RP.3) Proportional relationships have form $y = kx$ (passing through origin with no constant term). Only $y = 7x$ fits.



Hi, Confident Learner!

◇ This wide-ranging book gave you eight serious Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. Grade 7 math can feel big because it brings together rational numbers, expressions, equations, geometry, probability, and data. ◇

★ **Remember this:** But big topics become manageable when you practice one skill at a time. That is what you have been doing with every test in this book. ★

Confidence Builders

- **Know the Goal:** Identify what the question asks.
- **Use Vocabulary:** Math words point to math actions.
- **Show Work:** Give yourself something to check.
- **Celebrate Effort:** Practice is proof that you are moving.

Grade 7 test-day tip: When reviewing, do not only mark wrong answers. Write one sentence about what you learned from each one.

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

Jay Daie

Your Confidence 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

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