

6

MICHIGAN M STEP

GRADE

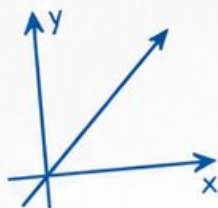
7

MATH

PRACTICE TESTS

Standards Aligned
Problem Solving For
Comprehensive
Assessment Programs

$$y = mx + b$$



$$2(x - 3) = 4x + 6$$



6 PRINTED TESTS



2 ONLINE TESTS



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



Build
Confidence



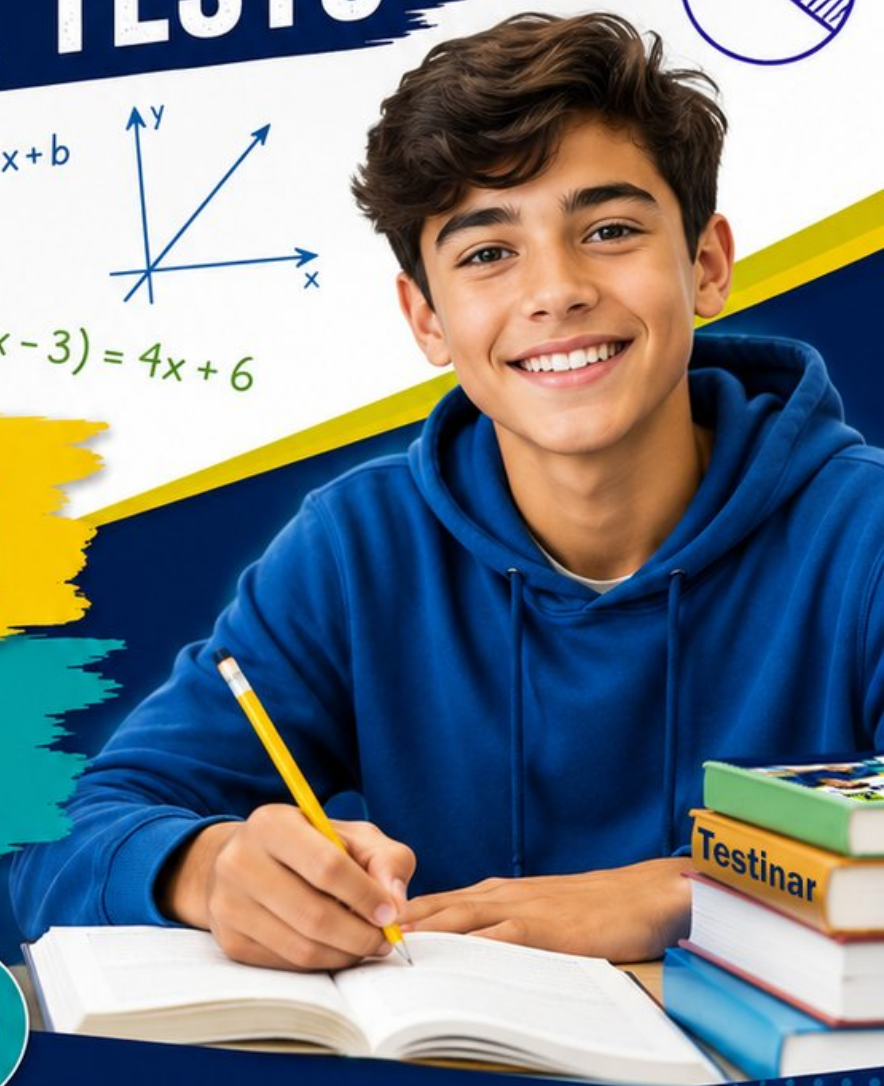
Strengthen
Math Skills



Detailed Answers
& Explanations



Improve Test
Performance



6 Michigan M STEP Grade 7 Math Practice Tests

M-STEP-Aligned Practice with Review and Explanations



Six 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!

Six focused rounds for sharper M STEP math thinking

This book gives you six 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 six-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?

Six M STEP tests, 240 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.
Answer Pages	Compact keys and explanations that show why each answer works.

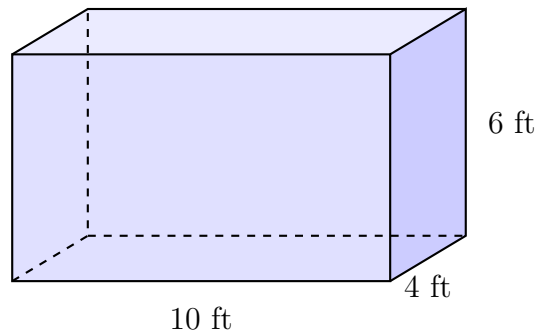
The tests are mixed on purpose. Grade 7 success means recognizing which idea is being tested even when the next question changes format.



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& answers

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1)

The colored isometric view represents a rectangular prism. Which calculation correctly finds its surface area?

☐ A. $2(10 + 6 + 4)$

☐ B. $2(10 \times 6 \times 4)$

☐ C. $2(10 \times 6 + 10 \times 4 + 6 \times 4)$

☐ D. $10 \times 6 \times 4$

2) Solve: $-3(x + 2) = 9$

☐ A. $x = -5$

☐ B. $x = -3$

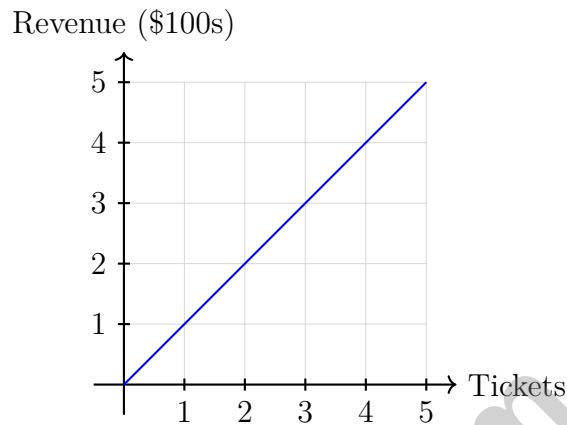
☐ C. $x = 1$

☐ D. $x = 3$



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- 3) The graph below shows the relationship between number of tickets and total revenue. Which statement is true?



- ☐ A. Not proportional; points are not connected ☐ C. Proportional; slope is negative
☐ B. Not proportional; too steep ☐ D. Proportional; line passes through origin
- 4) A spinner with unequal sections is spun many times in a simulation. The relative frequency of one outcome converges to 0.32 after 10000 spins. What does this tell you about the theoretical probability of that outcome?
- ☐ A. The theoretical probability is exactly 0.32 ☐ C. The theoretical probability is less than 0.32
☐ B. The theoretical probability is approximately 0.32 ☐ D. The theoretical probability cannot be determined from this information
- 5) A bicycle wheel has diameter 0.6 meters. If the bike travels 30 meters, how many complete rotations did the wheel make? Use $\pi \approx 3.14$, round to the nearest whole number.



- 6) Two datasets both have a range of 30. Which measure would help distinguish their variability further?

☐ A. Mode ☐ C. Minimum value
☐ B. Interquartile range or MAD ☐ D. Outlier count

- 7) A quarter circle has a radius of 12 feet. What is its area? (Use $\pi \approx 3.14$.)

- 8) A bar graph shows sales by quarter. The title says “Quarterly Sales Growth,” but the y-axis starts at \$90,000 (not \$0), and Q1–Q2 sales only rise from \$100,000 to \$101,000. Why is this graph potentially misleading?

☐ A. The bars are too tall ☐ C. The color scheme is confusing
☐ B. The y-axis doesn’t start at zero, exaggerating the growth ☐ D. The labels are too small

- 9) A jar contains colored beads. If $P(\text{purple}) = \frac{6}{25}$ and there are 25 beads total, how many purple beads are there?

☐ A. 6 ☐ C. 25
☐ B. 19 ☐ D. 5

- 10) A spinner with sections 1, 2, 3 is spun, and a coin is flipped. What is the probability of getting a number greater than 1 and a Tails?

☐ A. $\frac{1}{6}$ ☐ C. $\frac{2}{3}$
☐ B. $\frac{1}{3}$ ☐ D. $\frac{1}{2}$



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1) Which scenario shows the most total interest earned over 3 years with compound interest?

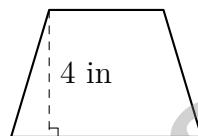
☐ A. \$2,000 at 4%

☐ C. \$2,500 at 3%

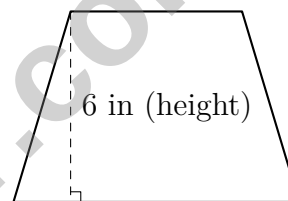
☐ B. \$1,000 at 8%

☐ D. \$1,500 at 6%

2) A fair six-sided die is rolled 60 times. Based on the theoretical probability, how many times would you expect to roll a 5?



6 in (base)



9 in (base)

3)

The two trapezoids are similar. The left trapezoid has a base of 6 inches and a height of 4 inches. The right trapezoid has a base of 9 inches. What is the scale factor from left to right?

☐ A. 1.25

☐ C. 1.67

☐ B. 1.5

☐ D. 2



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- 4) A tablet costs \$400 and is discounted by 25%. What is the new price?
- ☐ A. \$100 ☐ C. \$325
☐ B. \$375 ☐ D. \$300
- 5) A bag contains 3 red marbles, 2 blue marbles, and 5 green marbles. To simulate drawing one marble, which probability does rolling a standard die best represent?
- ☐ A. Probability of drawing red ☐ D. Probability of drawing blue or green
☐ B. Probability of drawing blue
☐ C. Probability of drawing green
- 6) A scout estimated that a hiking trail is 7.5 miles long, but the actual length is 8.25 miles. What is the percent error?
- ☐ A. 90.9% ☐ C. 0.75%
☐ B. 10% ☐ D. 9.1%
- 7) Expand and simplify: $-1(x + 5) + 2x$
- ☐ A. $x - 5$ ☐ C. $x + 5$
☐ B. $-x - 5$ ☐ D. $3x - 5$
- 8) Which expression equals -7 ?
- ☐ A. $-2 - 5$ ☐ C. $-9 + 1$
☐ B. $-1 - 5$ ☐ D. $3 - (-4)$
- 9) A young entrepreneur receives a business loan of \$8500 at 8.5% simple interest. If the loan is for 18 months, what is the total amount that must be repaid?
- ☐ A. \$10725 ☐ C. \$10187.50
☐ B. \$9722.50 ☐ D. \$9587.50



1) Which statement is true?

☐ A. $(-6) \times 3 > 0$

☐ C. $5 \times (-2) = (-2) \times 5$

☐ B. $(-4) \times (-4) < 0$

☐ D. $(-1) \times 7 < (-1) \times 6$

2) A meal delivery service charges a subscription fee of \$35 and \$4.99 per meal. If the total monthly cost is \$84.85, which equation represents m , the number of meals?

☐ A. $35m + 4.99 = 84.85$

☐ C. $35(m + 4.99) = 84.85$

☐ B. $4.99 + 35m = 84.85$

☐ D. $4.99m + 35 = 84.85$

3) Which value makes $2(x + 5) = 18$ true?

☐ A. $x = 2$

☐ C. $x = 5$

☐ B. $x = 4$

☐ D. $x = 9$

4) A plant scientist measures the heights (in cm) of two plant varieties after 6 weeks:

Variety	Mean	Median	IQR
Fast-Grow	32	31	8
Steady-Grow	31	32	3

Which statement best describes the distributions?

☐ A. Fast-Grow is taller and more consistent

☐ C. Both varieties are identical

☐ B. Steady-Grow has low outliers; Fast-Grow has consistent growth

☐ D. Steady-Grow is more consistent; Fast-Grow skewed high


- 5) A histogram displays the heights (in inches) of 40 seventh-graders. The intervals are 55–60, 60–65, 65–70, 70–75. The heights of the bars are 6, 14, 16, and 4. Which conclusion is valid?
- ☐ A. Most students are taller than 75 inches ☐ C. 75% of students are between 65 and 70
- ☐ B. Most students are between 60 and 70 inches ☐ D. The average height is 65 inches
- 6) A box contains 15 pens: 6 red, 4 blue, 3 black, and 2 green. A pen is selected at random. What is the probability of selecting a red or green pen?
- ☐ A. $\frac{6}{15}$ ☐ C. $\frac{4}{15}$
- ☐ B. $\frac{8}{15}$ ☐ D. $\frac{7}{15}$
- 7) A coin is flipped and a number is chosen from a spinner with sections 1, 2, 3, 4. How many favorable outcomes result in a heads and an odd number?
- ☐ A. 1 ☐ C. 3
- ☐ B. 2 ☐ D. 4



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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 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.
- 2) **Choice A is correct.** (7.EE.3-7.EE.4) Divide by -3 : $x + 2 = -3$. Subtract 2: $x = -5$.
- 3) **Choice D is correct.** (7.RP.1-7.RP.3) The line passes through the origin $(0,0)$ with slope $k = 1$. Since it passes through the origin, it is proportional.
- 4) **Choice B is correct.** (7.SP.5-7.SP.8) By the Law of Large Numbers, as the number of trials increases, the relative frequency (experimental probability) converges to the theoretical probability. With 10000 spins, the relative frequency of 0.32 is a strong estimate of the true theoretical probability.
- 5) **The correct answer is 16.** (7.G.4-7.G.6) Circumference $= \pi d = 3.14 \times 0.6 = 1.884$ m. Rotations $= 30 \div 1.884 \approx 16$.
- 6) **Choice B is correct.** (7.SP.1-7.SP.4) Range only tells the difference between max and min. IQR and MAD show how data is distributed within that range, distinguishing clustered from spread-out data with the same range.
- 7) **The correct answer is 113.04.** (7.G.4-7.G.6) Full circle: $A = 3.14 \times 12^2 = 3.14 \times 144 = 452.16$ ft². Quarter: $\frac{452.16}{4} = 113.04$ ft².
- 8) **Choice B is correct.** (7.SP.1-7.SP.4) When the y-axis does not start at zero, small changes appear visually much larger than they actually are. Here, a 1% increase is exaggerated into what looks like significant growth.
- 9) **Choice A is correct.** (7.SP.5-7.SP.8) $P(\text{purple}) = \frac{6}{25}$ means 6 purple beads out of 25 total.
- 10) **Choice B is correct.** (7.SP.5-7.SP.8) Total outcomes: $3 \times 2 = 6$. Favorable (number > 1 and Tails): 2T, 3T. Probability: $\frac{2}{6} = \frac{1}{3}$.
- 11) **Choice B is correct.** (7.SP.6) Experimental: $\frac{85}{800} \approx 0.106$. Theoretical: $\frac{1}{8} = 0.125$. The experimental probability came from the observed data.
- 12) **Choice B is correct.** (7.SP.5-7.SP.8) $P(\text{HHH}) = \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{8}$.
- 13) **Choice A is correct.** (7.SP.1-7.SP.4) January: leaves $1 \sim 8$ span $8 - 1 = 7$. July: leaves $3 \sim 9$ span $9 - 3 = 6$. January has a greater range of leaves, indicating greater variation within stem 7.
- 14) **Choice A is correct.** (7.SP.5-7.SP.8) A standard die only has faces 1–6, so rolling a 7 is impossible (probability $= 0$).
- 15) **Choice C is correct.** (7.RP.3) Percent error $= \frac{|12-15|}{15} \times 100\% = \frac{3}{15} \times 100\% = 20\%$.
- 16) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute 6: $6(m) - 6(1) = 6m - 6$.
- 17) **Choice D is correct.** (7.NS.1-7.NS.3) $3 - 7 = 3 + (-7) = -4$. We move left on the number line by 7 units from 3.
- 18) **Choice D is correct.** (7.RP.3) The line is linear; from year 0 to year 1, balance goes from \$2000 to \$2500 (gain of \$500).
- 19) **The correct answer is A,B.** (7.G.1-7.G.5) Statements A and B are correct. Corresponding sides in similar figures are proportional, and corresponding angles are congruent. C is wrong because angles don't change with scale. D is partially stated in A.
- 20) **Choice C is correct.** (7.NS.1b) Both numbers are positive. Add them directly: $14 + 11 = 25$.
- 21) **Choice A is correct.** (7.EE.1) Option A has like terms $2a$ and $6a$ that have not been combined. All others are fully simplified with no like terms remaining.
- 22) **The correct answer is 20.** (7.G.4-7.G.6) $V = \pi r^2 h \Rightarrow 565.2 = 3.14 \times 9 \times h \Rightarrow 565.2 = 28.26h \Rightarrow h = 20$ feet.
- 23) **Choice D is correct.** (7.RP.1-7.RP.3) Divide actual width by scale: $50 \text{ m} \div 10 \text{ m per cm} = 5 \text{ cm}$.
- 24) **Choice D is correct.** (7.RP.3) $33\frac{1}{3}\% = \frac{1}{3}$; $\frac{1}{3} \times 120 = 40$.
- 25) **Choice B is correct.** (7.EE.1-7.EE.2) Factor out the GCF 6 and the negative: $-6m + 18 = -6(m - 3)$. Check: $-6(m - 3) = -6m + 18$.
- 26) **Choice B is correct.** (7.SP.1-7.SP.4) $54^\circ \div 360^\circ \times 100 = 15\%$.
- 27) **Choice D is correct.** (7.RP.1-7.RP.3) Unit rate: $\frac{8/3}{4} = \frac{8}{3} \times \frac{1}{4} = \frac{8}{12} = \frac{2}{3}$ yard per outfit.
- 28) **Choice D is correct.** (7.RP.1-7.RP.3) Unit rate $= \$90 \div 6 = \15 per week.
- 29) **Choice C is correct.** (7.RP.3) Set up the proportion $\frac{x}{100} = \frac{16}{80}$. Cross-multiply: $x = \frac{16 \times 100}{80} = 20$.



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Hi, Persistent Problem Solver!

◇ Some Grade 7 questions ask you to hold several ideas in your mind at once. That can feel hard, and that is exactly why practice matters. ◇

★ **Remember this:** You showed persistence by continuing through the set. That habit is powerful because difficult problems often open after one more good attempt. You practiced across 6 full Grade 7 practice tests, and that repeated effort matters. ★

Persistence Tools

- **Try a Smaller Case:** Use an easier number to see the pattern.
- **Draw It:** Make the situation visible.
- **Restate It:** Say the question in your own words.
- **Check One Step:** Fix the first unclear place.

Grade 7 test-day tip: When stuck, do not restart everything. Find the first step you trust, then rebuild from there.

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

Jay Daie

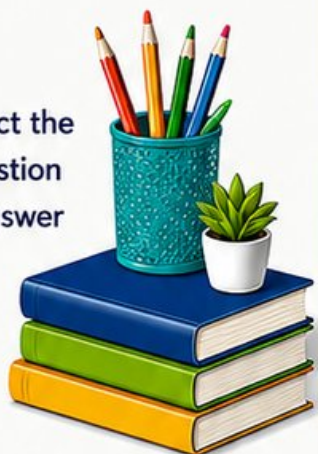
Your Persistence Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **6** 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:

6 Full-Length Printed Tests

2 Online Practice Tests

 Detailed Answers & 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



Build Confidence

Practice regularly to feel prepared and test-ready.



Strengthen Math Skills

Develop key math concepts and problem solving abilities.



Improve Understanding

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



Test Confidence

Familiarize with test formats and improve accuracy and speed.



Boost Performance

Apply your knowledge and achieve your best score!

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

Use these two additional online practice tests for extra review after the printed tests in this book.



2 EXTRA ONLINE TEST ACCESS CODE IS INSIDE THE BOOK!

Don't lose it—your extra practice and success start here!



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