

9 Michigan M STEP

GRADE 7

MATH

PRACTICE TESTS

Standards Aligned Problem Solving
For Comprehensive Assessment Programs

Program



**9 PRINTED
TESTS**



**2 ONLINE
TESTS**



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



BUILT FOR ACAP
Standards-Aligned



**STRENGTHEN
SKILLS**



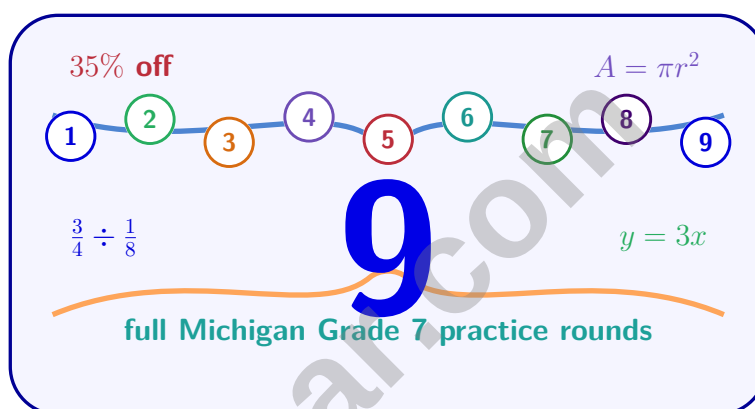
**SHARPEN
THINKING**



BE TEST-READY
Improve Performance

9 Michigan M STEP Grade 7 Math Practice Tests

*Standards-Aligned Michigan Practice for Proportional Reasoning, Expressions, Geometry,
Statistics, and Probability*



Nine 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!

Nine focused rounds for sharper M STEP math thinking

This book gives you nine 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 nine-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?

Nine M STEP tests, 360 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 7–9	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) A distance-time table shows a runner's proportional pace.

Time (min)	Distance (mi)
5	1
10	2
15	3
20	4

What is the constant of proportionality (miles per minute)?

- ☐ A. 0.1 mi/min ☐ C. 10 mi/min
☐ B. 5 mi/min ☐ D. 0.2 mi/min
- 2) A bag contains red and blue marbles. A simulation draws a marble, records the color (red), and replaces it. This is repeated 400 times, and red is drawn 284 times. Based on this simulation, what is the estimated probability of drawing a red marble? (Express as a decimal.)

- 3)

Service	Fee
Check deposit	\$0.25
Wire transfer	\$15.00
ATM withdrawal (out-of-network)	\$2.50
Monthly account fee	\$8.00

A customer performs one of each service during a month. What is the total in fees?

- ☐ A. \$25.00 ☐ C. \$26.00
☐ B. \$27.50 ☐ D. \$25.75



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- 4) A construction worker needs to find the area of a lot shaped like a rectangle (16 yd $\times$ 12 yd) minus a triangular section (12 yd base, 4 yd height) cut from one corner. What is the usable area?

☐ A. 168 yd²☐ C. 192 yd²☐ B. 176 yd²☐ D. 216 yd²

- 5) A rectangular prism with a volume of 360 m³ has a base area of 40 m². Find the height.

☐ A. 4 m☐ C. 9 m☐ B. 7 m☐ D. 14400 m

- 6) A carpenter charges \$180 for 6 hours of work. What is the hourly rate?

- 7) In a circle, how many different radii can you draw?

☐ A. 1☐ C. Infinitely many☐ B. 2☐ D. 10

- 8) A clearance rack shows final prices after all discounts and markups have been applied. An item shows “Final: \$57.60, originally \$96.” If the discount percent was the same across all items, what was the discount percent?

☐ A. 33%☐ C. 50%☐ B. 38.4%☐ D. 40%

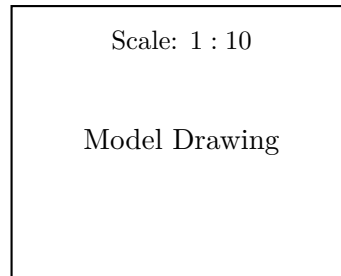
9) What is $7 + 9$?

☐ A. 2

☐ C. 63

☐ B. -2

☐ D. 16



5 units $\times$ 4 units

10)

If this model has a scale of 1 : 10, which statement about the actual object is true?

☐ A. It is 15 units $\times$ 14 units.

☐ C. The scale factor is 5.

☐ B. It is 1.67 units $\times$ 1.33 units.

☐ D. It is 50 units $\times$ 40 units.

11) A student answered 36 questions correctly on a 48-question test. What percent of the questions did the student answer correctly?

☐ A. 60%

☐ C. 75%

☐ B. 70%

☐ D. 80%

12) Evaluate $7 - 3x$ when $x = -2$.

☐ A. 1

☐ C. -6

☐ B. 13

☐ D. 10



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- 1) A restaurant has 3 appetizers, 5 main courses, and 2 desserts. If a diner chooses one of each, how many complete meals are possible?

☐ A. 10 ☐ C. 20
☐ B. 15 ☐ D. 30

- 2) What is $4 - 10$?

☐ A. 6 ☐ C. 14
☐ B. -14 ☐ D. -6

- 3) Simplify: $\frac{\frac{4}{5}}{\frac{2}{3}}$

☐ A. $\frac{10}{12}$ ☐ C. $\frac{10}{6}$
☐ B. $\frac{8}{15}$ ☐ D. $\frac{6}{5}$

- 4) Students sold raffle tickets. The table shows tickets sold and money earned. Which quantity is proportional to the other?

Tickets	10	20	30
Money (\$)	25	50	75

☐ A. Only if they sell more than 40 tickets ☐ C. Yes; $k = 10$
☐ B. No; the amounts are too large ☐ D. Yes; $k = 2.5$

- 5) Which equation represents a proportional relationship with a constant of proportionality of 3?

☐ A. $y = 3x + 2$ ☐ C. $y = \frac{x}{3}$
☐ B. $y = x + 3$ ☐ D. $y = 3x$



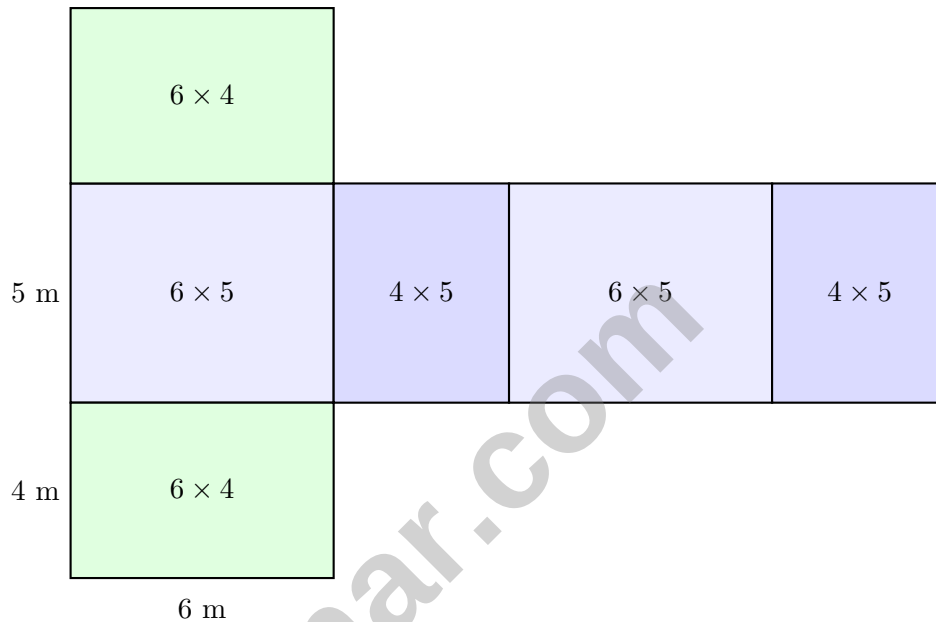
6) Factor: $6xy + 9x$

☐ A. $3x(2y + 3)$

☐ C. $9(2xy + 1)$

☐ B. $6x(y + 1.5)$

☐ D. $x(6y + 9)$



7)

A net shows the unfolded faces of a rectangular prism. Based on the labeled dimensions, what is the surface area?

☐ A. 148 m^2

☐ C. 200 m^2

☐ B. 160 m^2

☐ D. 240 m^2

8) A bakery wants to estimate how often customers buy croissants. It surveys only customers who purchase items on a Thursday morning. What population is being studied?

☐ A. All customers of the bakery

☐ C. Customers who buy croissants

☐ B. Customers who shop on Thursday morning

☐ D. All people in the neighborhood

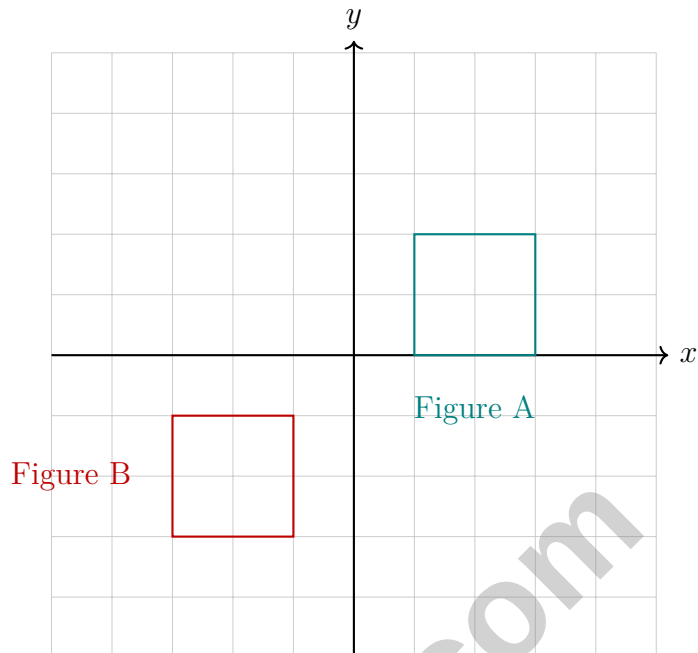


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- 1) A printing company charges \$25 for the first 100 copies and \$0.10 for each additional copy. Which equation represents the total cost C for x copies beyond 100?
- ☐ A. $C = 0.10x + 25$ ☐ C. $C = 0.10 + 25x$
☐ B. $C = 25x + 0.10$ ☐ D. $C = 25(x + 0.10)$
- 2) A map shows a rectangular park with scale 1 in : 500 ft. An error causes the scale to be doubled (widening the drawing). If the park measures 6 inches by 8 inches on the original map, what are the dimensions on the incorrectly scaled map?
- ☐ A. 3 in by 4 in ☐ C. 12 in by 16 in
☐ B. 6 in by 8 in ☐ D. 24 in by 32 in
- 3) A cube is cut diagonally from one corner to the opposite corner through the interior, creating a plane that passes through three vertices. What shape is the cross-section?
- ☐ A. Equilateral triangle ☐ C. Right triangle
☐ B. Isosceles triangle ☐ D. Scalene triangle
- 4) An angle is 3 times its complement. What is the measure of the larger angle?
- ☐ A. 67.5° ☐ C. 22.5°
☐ B. 45° ☐ D. 90°



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5)

Figure A is transformed to Figure B by a single transformation. What is the transformation?

- ☐ A. Translation by $(-4, -2)$ ☐ C. Reflection over the line $y = -x$
☐ B. Rotation of 180° about the origin ☐ D. Reflection over the line $y = x$



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) $k = 1/5 = 0.2$ miles per minute. Verify: $2/10 = 0.2$ and $3/15 = 0.2$.
- 2) **The correct answer is 0.71.** (7.SP.5-7.SP.8) Relative frequency: $\frac{284}{400} = 0.71$.
- 3) **Choice D is correct.** (7.RP.3) Total fees = $0.25 + 15.00 + 2.50 + 8.00 = \25.75 .
- 4) **Choice A is correct.** (7.G.4-7.G.6) Rectangle: $16 \times 12 = 192$ yd². Triangle: $\frac{1}{2} \times 12 \times 4 = 24$ yd². Remaining: $192 - 24 = 168$ yd².
- 5) **Choice C is correct.** (7.G.4-7.G.6) $h = \frac{V}{B} = \frac{360}{40} = 9$ m.
- 6) **The correct answer is 30.** (7.RP.1-7.RP.3) Hourly rate = $180 \div 6 = 30$ dollars per hour.
- 7) **Choice C is correct.** (7.G.4-7.G.6) You can draw a radius from the center to any point on the circle, so there are infinitely many radii.
- 8) **Choice D is correct.** (7.RP.3) Discount amount = $96 - 57.60 = \$38.40$. Percent = $(38.40/96) \times 100 = 40\%$.
- 9) **Choice D is correct.** (7.NS.1b) Both numbers are positive, so add them directly: $7 + 9 = 16$.
- 10) **Choice D is correct.** (7.RP.1-7.RP.3) A scale of 1 : 10 means each model unit represents 10 actual units. The actual dimensions are $5 \times 10 = 50$ units and $4 \times 10 = 40$ units.
- 11) **Choice C is correct.** (7.RP.3) $\frac{36}{48} = \frac{3}{4} = 0.75 = 75\%$.
- 12) **Choice B is correct.** (7.EE.1-7.EE.2) Substitute: $7 - 3(-2) = 7 + 6 = 13$.
- 13) **Choice D is correct.** (7.RP.1-7.RP.3) Unit rate = $\frac{4/5}{2/5} = \frac{4}{5} \times \frac{5}{2} = \frac{20}{10} = 2$ documents per minute.
- 14) **Choice D is correct.** (7.RP.1-7.RP.3) Defining feature of proportional relationships: constant ratio k where $y = kx$. All other options are false.
- 15) **The correct answer is 1050.** (7.SP.1-7.SP.4) $\frac{35}{140} = \frac{x}{4200}$. Reduce: $\frac{1}{4} = \frac{x}{4200} \Rightarrow x = 1050$.
- 16) **Choice D is correct.** (7.RP.3) Set part over whole equal to percent over 100: $\frac{32}{80} = \frac{p}{100}$. Cross-multiply: $p = 40\%$.
- 17) **Choice D is correct.** (7.RP.3) Simple interest = $\$2,500 \times 0.04 \times 3 = \300 . Total = $\$2,500 + \$300 = \$2,800$.
- 18) **Choice B is correct.** (7.EE.3-7.EE.4) Speed = $\frac{\text{distance}}{\text{time}} = \frac{240}{4} = 60$ mph. Reasonableness check: $60 \text{ mph} \times 4 \text{ hours} = 240 \text{ miles}$ ✓. Estimate: 240 is close to 250; $250 \div 5 \approx 50$, so 60 is reasonable.
- 19) **Choice B is correct.** (7.EE.4b) Subtract 2: $-4x > 8$. Divide by -4 and flip: $x < -2$ (not $x > -2$). The student forgot the flip rule.
- 20) **Choice C is correct.** (7.G.1-7.G.5) Actual dimensions: $4 \text{ cm} \times 1.5 = 6 \text{ m}$ and $5 \text{ cm} \times 1.5 = 7.5 \text{ m}$. Area = $6 \times 7.5 = 45 \text{ m}^2$.
- 21) **Choice B is correct.** (7.G.4-7.G.6) The area formula requires squaring the radius: $A = \pi r^2 = 3.14 \times (1.5)^2$. Option A skips squaring. Option D is the circumference formula. Option C is incorrect.
- 22) **The correct answer is A,C.** (7.G.1-7.G.5) A is true: three specific side lengths uniquely determine a triangle. C is true: two sides and the angle between them uniquely determine a triangle. B is false: three angles determine shape but not size (infinitely many similar triangles). D is false: two sides and a non-included angle can produce 0, 1, or 2 triangles.
- 23) **Choice D is correct.** (7.RP.1-7.RP.3) The constant is $k = \frac{6}{3} = 2$. The equation is $y = 2x$.
- 24) **Choice D is correct.** (7.NS.1-7.NS.3) $\frac{1}{4} - \frac{3}{4} = -\frac{2}{4} = -\frac{1}{2}$.
- 25) **Choice B is correct.** (7.NS.1-7.NS.3) $8 \times 8 = 64$, therefore $\sqrt{64} = 8$.
- 26) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute: $4x + 8 - (x - 5) = 4x + 8 - x + 5$. Combine: $(4x - x) + (8 + 5) = 3x + 13$.
- 27) **Choice B is correct.** (7.EE.3-7.EE.4) Substitute $x = 4$: $6(4) + 2 = 24 + 2 = 26$ ✓. Subtract 2: $6x = 24$, divide by 6: $x = 4$.
- 28) **Choice B is correct.** (7.SP.5-7.SP.8) Total marbles: $3 + 5 + 2 = 10$. Red: 3 out of 10 gives $\frac{3}{10}$. (Blue would be $\frac{5}{10}$, green $\frac{2}{10}$, not red $\frac{7}{10}$).
- 29) **Choice C is correct.** (7.NS.2) $-\frac{1}{4} \times 8 = -\frac{8}{4} = -2$.
- 30) **Choice B is correct.** (7.SP.1-7.SP.4) Values ≥ 30 : 30, 32, 33, 35, 37, 41, 48 from stems 3 and 4. Total: 7 values.



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Hi, Confident Learner!

◇ This high-stamina book gave you nine substantial 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 **9** 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:

9 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.

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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.

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



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