

7 Michigan M STEP Grade 7 Math Practice Tests



ONLINE

7 PRINTED TESTS + 2 ONLINE TESTS

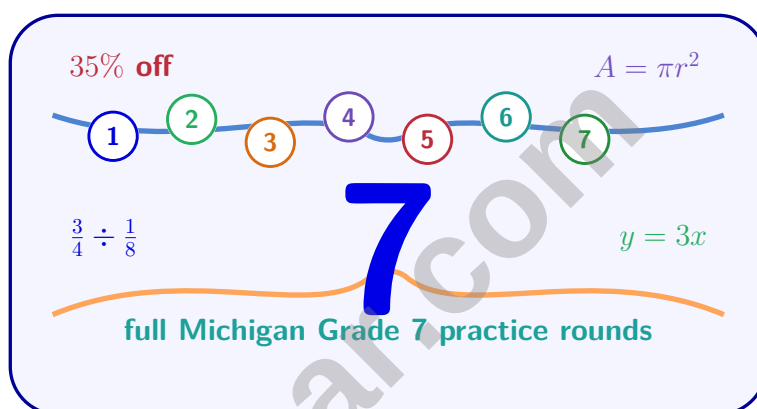


**Standards Aligned Problem Solving
For Comprehensive Assessment Programs**



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



Copyright ©

Testinar Inc



Published by Testinar Inc

Testinar.com

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the author, except in the case of brief quotations embodied in critical reviews and certain other noncommercial uses permitted by copyright law, including Section 107 or 108 of the 1976 United States Copyright Act.

This publication is independently produced and has no official connection to any state, district, or national testing program.

Test names and organizational names used herein are the property of their respective trademark holders.



Copyright ©

Welcome, Michigan Grade 7 Problem Solver!

Eight focused rounds for sharper M STEP math thinking

This book gives you seven 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, 280 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.



Scan me!
For more practice
& answers

Table of Contents

★ Practice Test 1	_____	15
★ Practice Test 2	_____	29
★ Practice Test 3	_____	45
★ Practice Test 4	_____	59
★ Practice Test 5	_____	73
★ Practice Test 6	_____	88
★ Practice Test 7	_____	102
Practice Test Answer Keys	_____	117
Practice Test Answers and Explanations	_____	122

1) A triangle has one side of length 11 cm. If the other two sides each have length x cm, for which values of x can a valid triangle be formed?

- ☐ A. Any positive value of x
☐ C. $5.5 < x$
☐ B. $0 < x \leq 11$
☐ D. $x \geq 11$

2) Simplify: $(x^3)^7$

- ☐ A. x^{10}
☐ C. x^{49}
☐ B. x^{21}
☐ D. x^{343}

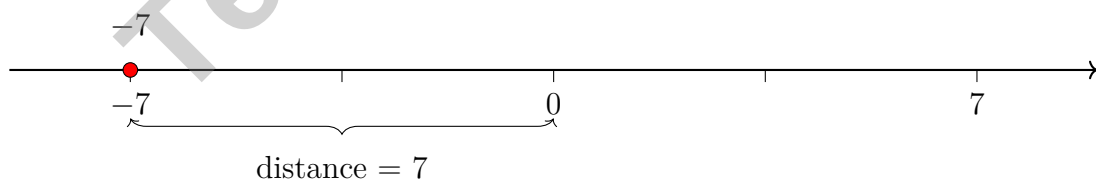
3) A customer's bill at a cafe is \$36. She wants to tip 20% and then split the total equally with a friend. How much does each person pay?

- ☐ A. \$18.00
 ☐ C. \$25.20
☐ B. \$43.20
 ☐ D. \$21.60

4) Tanya deposits \$800 in an account at 9% annual compound interest. What is the balance after 2 years?

- ☐ A. \$944.72
 ☐ C. \$952
☐ B. \$972
 ☐ D. \$950.48

5) What is $|-7|$?



- ☐ A. -7 (confuses absolute value with the original number)
 ☐ C. 0 (misplaces absolute value at the origin)
☐ B. -14 (incorrectly applies a sign reversal)
 ☐ D. 7 (correct; distance is always non-negative)



Scan me!
For more practice
& answers

6) Simplify: $-3p - 4p + 2p$

☐ A. $-5p$

☐ C. $9p$

☐ B. $-9p$

☐ D. 0

7) A student calculates the surface area of a rectangular prism with dimensions 5 cm, 3 cm, and 4 cm. They compute $5 \times 3 + 5 \times 4 + 3 \times 4 = 47 \text{ cm}^2$ and forget to multiply by 2. What error did they make?

☐ A. They calculated only one pair of faces instead of all pairs.

☐ C. They used subtraction instead of addition.

☐ B. They forgot to square each dimension.

☐ D. They included a face that doesn't exist.

8) Factor out the GCF from $30x - 18y + 6$:

☐ A. $6(5x - 3y + 1)$

☐ C. $3(10x - 6y + 2)$

☐ B. $6(5x - 3y)$

☐ D. $30(x - y + 0.2)$

9)

Number of Heads	0	1	2	3	Total
Frequency	12	36	37	15	100

A coin is flipped 3 times in each trial, and this is repeated 100 times. The table shows the number of heads per trial. What is the estimated probability of getting exactly 2 heads in three flips?

☐ A. 0.27

☐ C. 0.37

☐ B. 0.35

☐ D. 0.40



10) Convert 0.32 to a fraction in simplest form.

☐ A. $\frac{32}{100}$
☐ B. $\frac{16}{50}$

☐ C. $\frac{8}{25}$
☐ D. $\frac{4}{12}$

11) A temperature reading shows -5°F in the morning. By afternoon, the temperature increases by 18°F . What is the afternoon temperature?

☐ A. -23°F
☐ B. 13°F

☐ C. 23°F
☐ D. -13°F

12) A car travels at a constant speed passing through the origin and the point (2, 140) on a distance-time graph (where x = hours and y = miles). What is the unit rate in miles per hour?

13) A microscopic organism measures 0.000003 cm. What is this measurement in scientific notation?

☐ A. 3×10^{-5}
☐ B. 3×10^{-6}

☐ C. 3×10^5
☐ D. 0.3×10^{-5}

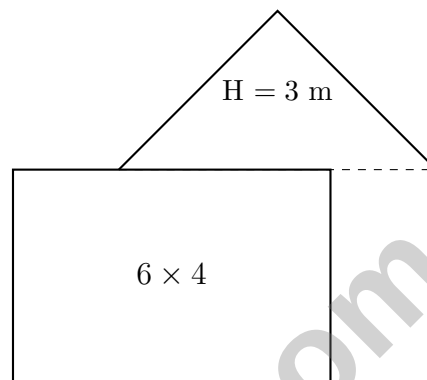
14) A school had 360 students. If $\frac{1}{3}$ of them attend the science club, what percent is that?



Scan me!
For more practice
& answers

- 1) A grocery store owner borrows \$12000 for renovations at 9.5% simple interest for 4 years. What is the total repayment amount?

☐ A. \$12950 ☐ C. \$17400
☐ B. \$19200 ☐ D. \$16560



2)

A student tried to find the area of a house shape (rectangle $6 \text{ m} \times 4 \text{ m}$ with triangle on top, base 6 m , height 3 m). The student calculated $6 \times 4 + 6 \times 3 = 24 + 18 = 42 \text{ m}^2$. What is the correct area?

☐ A. 24 m^2 ☐ C. 42 m^2
☐ B. 33 m^2 ☐ D. 51 m^2

- 3) A triangular prism has a volume of 240 cm^3 and a depth of 10 cm . What is the area of the triangular base?

☐ A. 12 cm^2 ☐ C. 36 cm^2
☐ B. 24 cm^2 ☐ D. 48 cm^2



Scan me!
For more practice
& answers

4) How many distinct triangles can be drawn with side lengths 5 cm, 7 cm, and 12 cm?

☐ A. 0

☐ C. 2

☐ B. 1

☐ D. Infinitely many

5) Which is the best approximation for π ?

☐ A. $\frac{22}{7}$

☐ C. 2.5

☐ B. 3

☐ D. 4

6) Simplify: $\frac{1}{2}a + \frac{1}{4}a$

☐ A. $\frac{1}{8}a$

☐ C. $\frac{3}{4}a$

☐ B. $\frac{1}{6}a$

☐ D. $\frac{2}{6}a$

7) The temperature is 5°C and drops 1.2 degrees per hour for 5 hours. What is the final temperature?



- 1) A rectangular prism has a volume of 360 in^3 . If the length is 10 inches and the width is 6 inches, what is the height?
- ☐ A. 3 in ☐ C. 9 in
☐ B. 6 in ☐ D. 12 in
- 2) A garden has 72 plants. If 25% are flowers and the rest are vegetables, how many vegetables are there?
- ☐ A. 18 ☐ C. 48
☐ B. 36 ☐ D. 54
- 3) Water flows from a faucet at a rate of 6 liters per minute. Which equation gives the total volume V (liters) after t minutes?
- ☐ A. $V = \frac{6}{t}$ ☐ C. $t = 6V$
☐ B. $V = t + 6$ ☐ D. $V = 6t$
- 4) A gardener increased the area of a flowerbed from 40 square feet to 56 square feet. What is the percent increase?
- ☐ A. 16% ☐ C. 40%
☐ B. 28.6% ☐ D. 60%
- 5) Which situation best describes a *random sample*?
- ☐ A. Surveying the first 30 people at a public event ☐ C. Asking volunteers to participate in a study
☐ B. Drawing names from a hat containing all members' names ☐ D. Interviewing people at a shopping mall on a Saturday



- 6) A compound event simulation uses a spinner with 5 equal sections. The spinner is spun twice, and “success” is defined as “both spins land on the same section.” How many successful outcomes are there in the sample space?

☐ A. 5☐ C. 15☐ B. 10☐ D. 25

- 7) Solve: $1.5x - 3 \leq 4.5$

☐ A. $x \leq 5$ ☐ C. $x < 5$ ☐ B. $x \geq 5$ ☐ D. $x \leq 4.5$

- 8) A model airplane has a scale of 1 in : 8 ft. The model is 12 inches long. How long is the actual airplane?

☐ A. 48 ft☐ C. 96 ft☐ B. 64 ft☐ D. 108 ft

- 9) A store buys a shirt for c dollars and marks it up by 50%. What is the selling price if $c = 16$?

- 10) A catering service charges a \$250 setup cost and \$15 per guest. If the event cost \$520, write an equation to represent the number of guests g attending, solve for g , and verify your answer.



Scan me!
For more practice
& answers

Michigan Student Test of Educational Progress 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 Student Test of Educational Progress practice test.



Scan me!
For more practice
& answers

Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice C is correct.** (7.G.1-7.G.5) Triangle Inequality requires: $x + x > 11$, so $x > 5.5$. The other conditions $11 + x > x$ and $x + 11 > x$ are always true. There is no upper bound on x from the Triangle Inequality.
- 2) **Choice B is correct.** (7.EE.1-7.EE.2) Power rule: $(x^3)^7 = x^{3 \times 7} = x^{21}$.
- 3) **Choice D is correct.** (7.RP.3) Tip: $0.20 \times 36 = \$7.20$. Total bill: $36 + 7.20 = \$43.20$. Each person pays $43.20 \div 2 = \$21.60$.
- 4) **Choice D is correct.** (7.RP.3) Year 1: $800 \times 1.09 = 872$. Year 2: $872 \times 1.09 = 950.48$.
- 5) **Choice D is correct.** (7.NS.1-7.NS.3) The absolute value of any number is its distance from zero, which is always non-negative. $|-7| = 7$.
- 6) **Choice A is correct.** (7.EE.1) Combine: $(-3 - 4 + 2)p = -5p$. All terms are like terms with variable p .
- 7) **Choice A is correct.** (7.G.4-7.G.6) The formula $SA = 2(lw + lh + wh)$ requires multiplying by 2 because each rectangle pair appears twice. The student calculated only one of each pair, missing half the surface area.
- 8) **Choice A is correct.** (7.EE.1-7.EE.2) GCF of coefficients 30, 18, 6 is 6. Factor: $30x - 18y + 6 = 6(5x - 3y + 1)$.
- 9) **Choice C is correct.** (7.SP.5-7.SP.8) Relative frequency = $\frac{37}{100} = 0.37$. (Theoretical is $\frac{3}{8} = 0.375$, so this is very close.)
- 10) **Choice C is correct.** (7.NS.2d) $0.32 = \frac{32}{100}$. Divide by GCD(32, 100) = 4: $\frac{32 \div 4}{100 \div 4} = \frac{8}{25}$.
- 11) **Choice B is correct.** (7.NS.1-7.NS.3) Afternoon temperature = $-5 + 18 = 13^\circ\text{F}$.
- 12) **The correct answer is 70.** (7.RP.1-7.RP.3) The unit rate is $140 \div 2 = 70$ miles per hour. This is the car's constant speed.
- 13) **Choice B is correct.** (7.NS.1-7.NS.3) Move the decimal 6 places to the right to get 3. Exponent is -6 .
- 14) **The correct answer is 33.3%.** (7.RP.3) $\frac{1}{3} = 0.333\ldots = 33.\overline{3}\%$. Approximately 33% of the students attend the science club.
- 15) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute the negative: $16d - 9 - 7d + 4 = (16d - 7d) + (-9 + 4) = 9d - 5$.
- 16) **The correct answer is \$960.** (7.RP.3) Discount: $\frac{20}{100} \times 1200 = 240$. New price: $1200 - 240 = \$960$.
- 17) **Choice B is correct.** (7.EE.4a) Distribute: $-3x - 12 = 24$. Add 12: $-3x = 36$. Divide by -3 : $x = -8$.
- 18) **Choice A is correct.** (7.EE.4b) Subtract 7: $2x \geq -8$. Divide by 2: $x \geq -4$.
- 19) **Choice C is correct.** (7.G.1-7.G.5) Scale factor is 10. Actual dimensions: 40 cm $\times$ 24 cm. Perimeter: $2(40 + 24) = 128$ cm.
- 20) **Choice C is correct.** (7.G.1-7.G.5) Multiply by scale factor: 8 in $\times$ 2 ft/in = 16 ft and $12 \times 2 = 24$ ft.
- 21) **Choice C is correct.** (7.G.1-7.G.5) A cube has all square faces. A cut parallel to any face produces a square cross-section congruent to that face.
- 22) **The correct answer is A,C.** (7.RP.1-7.RP.3) True: A ($4 \times 6 = 24$ feet) and C ($2 \times 6 = 12$ feet; $2.5 \times 6 = 15$ feet). False: B (area scales by $6^2 = 36$, not 6); D (area: $900 \div 36 = 25$ sq in, not 36); E (areas are reduced by $\frac{1}{36}$ on the plan, not $\frac{1}{6}$).
- 23) **Choice B is correct.** (7.G.1-7.G.5) Adjacent angles on a straight line sum to 180° : $j = 180 - 90 = 90^\circ$. Alternatively, perpendicular lines form four right angles.
- 24) **Choice C is correct.** (7.G.1-7.G.5) On the line $y = x$, the x - and y -coordinates are equal. Only (3, 3) satisfies this.
- 25) **Choice D is correct.** (7.G.4-7.G.6) $C = \pi d = 3.14 \times 12 = 37.68 \approx 38$ ft.
- 26) **Choice A is correct.** (7.G.4-7.G.6) From $154 = \frac{22}{7} \times r^2$, we have $r^2 = 49$, so $r = 7$ cm.
- 27) **Choice C is correct.** (7.G.4-7.G.6) $SA = 2\pi r^2 + 2\pi rh \approx 2(3.14)(16) + 2(3.14)(4)(12) = 100.48 + 301.44 = 401.92 \text{ cm}^2$.
- 28) **Choice A is correct.** (7.SP.1-7.SP.4) Surveying only customers at one store at one time is a convenience sample because it only includes people who are easy to reach, not a random selection of all teenagers in the city.
- 29) **The correct answer is 30.** (7.RP.3) Months = $\$1,200 \div \$40 = 30$ months.
- 30) **Choice A is correct.** (7.NS.1-7.NS.3) Common denominator 4: $-\frac{6}{4} - \frac{9}{4} + \frac{19}{4} = \frac{-6-9+19}{4} = \frac{4}{4} = 1$.
- 31) **Choice B is correct.** (7.NS.1-7.NS.3) $m = (-7) \times (-4) = 28$.



Hi, Confident Learner!

◇ This broad and demanding book gave you seven strong 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 **7** 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:

7 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

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!



VISIT **TESTINAR.COM/MATH7** FOR MORE PRACTICE TESTS



PRACTICE
REGULARLY



STAY
FOCUSED



SOLVE
CONFIDENTLY



SUCCEED
BRIGHTLY