

10

Michigan M STEP

GRADE
7
MATH

PRACTICE TESTS

Standards Aligned Problem
Solving For Comprehensive
Assessment Programs



10 PRINTED TESTS

Realistic practice to build
confidence and mastery



2 ONLINE TESTS

Extra practice for
continued success



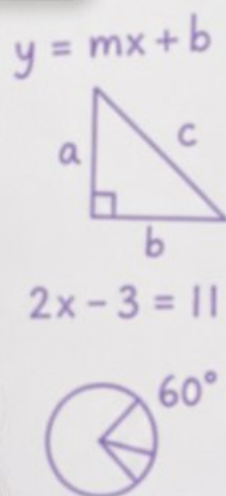
DETAILED ANSWER EXPLANATIONS

Learn with step-by-step
solutions



FOCUSED & EFFECTIVE

Target key math skills
with purposeful practice



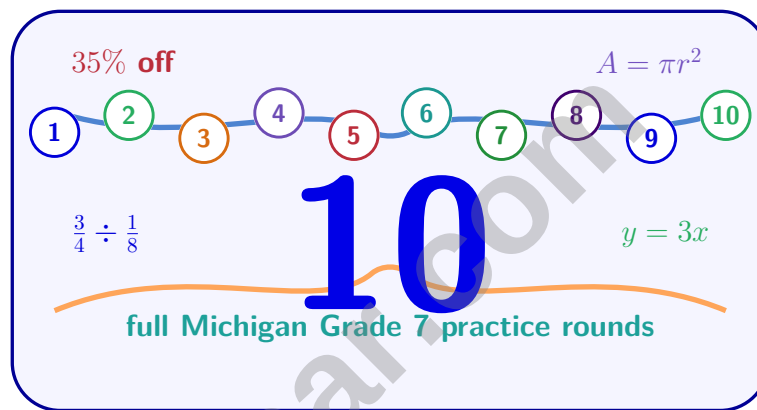
10 PRINTED TESTS
+2 ONLINE TESTS

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

PRACTICE ★ REVIEW ★ SUCCEED

10 Michigan M STEP Grade 7 Math Practice Tests

Michigan Grade 7 M STEP Practice for lake-strong review for ratios, percents, rational numbers, algebra, geometry, and statistics



Ten 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!

Ten focused rounds for sharper Michigan M STEP math thinking

This book gives you ten 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 ten-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?

Ten Michigan M STEP tests, 400 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.
Test 10	A final Michigan round to show growth across the whole book.
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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1) Solve: $-3x + 10 = 1$

☐ A. $x = -3$

☐ C. $x = 3$

☐ B. $x = 1$

☐ D. $x = 9$

2) A map uses a scale of 1 cm : 2 km. What is the actual distance if the map distance is 8 cm?

☐ A. 8 km

☐ C. 16 km

☐ B. 10 km

☐ D. 18 km

3) If a square has a side length of 8 cm, what is its area?

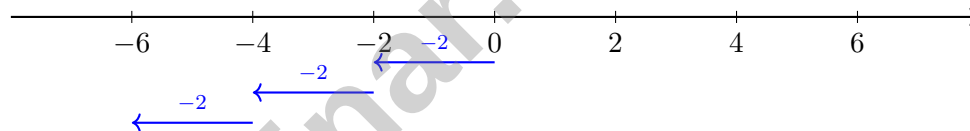
☐ A. 16 cm^2

☐ C. 64 cm^2

☐ B. 32 cm^2

☐ D. 128 cm^2

4) The number line shows repeated additions. What does $3 \times (-2)$ equal?



☐ A. -8

☐ C. 6

☐ B. -6

☐ D. 8

5) The IQR of a dataset is 12. What does this mean?

☐ A. The range is 12

☐ C. The mean is 12

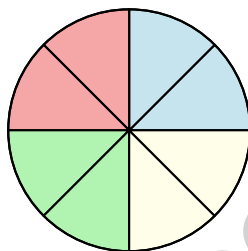
☐ B. The middle 50% of data spans 12 units

☐ D. All values are within 12 of the median



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- 6) A trapezoidal prism has a trapezoidal base with parallel sides 5 inches and 11 inches and a trapezoid height of 6 inches. The prism has a depth of 8 inches. What is the volume in cubic inches?



7)

A spinner has 8 equal sections: 2 blue, 2 red, 2 green, and 2 yellow. Which expression shows the complement rule for finding the probability of NOT spinning blue or red?

- ☐ A. $\frac{2}{8}$ ☐ C. $1 - \frac{1}{2}$
☐ B. $\frac{3}{8}$ ☐ D. $\frac{6}{8}$
- 8) When a standard die is rolled and a spinner with sections W, X, Y, Z is spun, how many favorable outcomes result in rolling a number less than 4 and landing on a consonant?
- ☐ A. 3 ☐ C. 9
☐ B. 6 ☐ D. 12



- 9) A histogram shows the age distribution of volunteers at a community center. The interval 40–50 years has a frequency of 18. If there are 120 total volunteers, what percentage are in the 40–50 age range?

☐ A. 12.5% ☐ C. 18%
☐ B. 15% ☐ D. 40%

- 10) A game involves spinning a spinner. The results of 600 spins are shown:

Outcome	Green	Yellow	Purple
Times	240	200	160

If the spinner is spun 1 more time, which outcome has the highest experimental probability of occurring?

☐ A. Green ☐ C. Purple
☐ B. Yellow ☐ D. All are equally likely

- 11) If the probability of rain on Monday is $\frac{1}{4}$ and the probability of rain on Tuesday is $\frac{1}{3}$, and these events are independent, what is the probability of NO rain on both days?

☐ A. $\frac{1}{6}$ ☐ C. $\frac{1}{7}$
☐ B. $\frac{1}{12}$ ☐ D. $\frac{1}{2}$

- 12) A chef estimated 3.5 cups of sugar were needed, but the recipe called for 4 cups. What is the percent error?

☐ A. 87.5% ☐ C. 0.5%
☐ B. 14.3% ☐ D. 12.5%



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1) A map uses a scale of 1 centimeter : 50 kilometers. If two cities are 3.5 cm apart on the map, what is the actual distance between them?

- ☐ A. 53.5 km ☐ C. 175 km
☐ B. 140 km ☐ D. 200 km

2) Looking at the garden plant histograms again, which range of plant counts is shared by both neighborhoods (overlap region)?

- ☐ A. 20–25 plants (overlap of both distributions) ☐ C. No overlap; neighborhoods are completely separate
☐ B. 15–35 plants (entire combined range) ☐ D. Only exactly 25 plants

3) The stem-and-leaf plot below displays the number of points scored:

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

What is the lower quartile (Q1) of this dataset?

- ☐ A. 52 ☐ C. 58
☐ B. 55 ☐ D. 61

4) A mosaic is a square ($14\text{ cm} \times 14\text{ cm}$) with four identical corner triangles removed (each $3\text{ cm} \times 3\text{ cm}$ right triangle). What is the remaining area?

- ☐ A. 160.5 cm^2 ☐ C. 196 cm^2
☐ B. 178 cm^2 ☐ D. 205.5 cm^2



5) Expand and simplify: $5(x - 2) + 3(x + 4)$

☐ A. $8x + 22$

☐ C. $5x + 7$

☐ B. $8x + 12$

☐ D. $8x + 2$

6) Identify the expression that is already simplified.

☐ A. $2x + 3x + 4y$

☐ C. $7m + 3n - 2p$

☐ B. $5a + 3a + 2b$

☐ D. $4c + 2c + 5c$

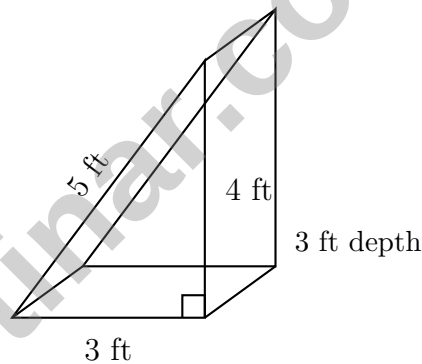
7) Factor: $-14p + 35q$

☐ A. $-7(2p - 5q)$

☐ C. $7(2p + 5q)$

☐ B. $7(-2p + 5q)$

☐ D. $-7(2p + 5q)$



8)

A triangular prism has a right triangular base with legs 3 ft and 4 ft (hypotenuse 5 ft), and the prism has depth 3 ft. Find the surface area.

☐ A. 12 ft^2

☐ C. 48 ft^2

☐ B. 24 ft^2

☐ D. 72 ft^2



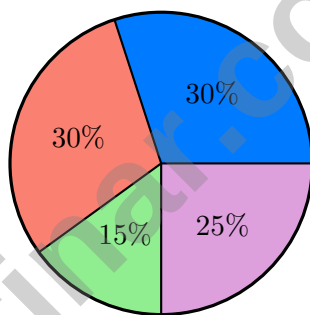
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- 1) Two cards are drawn from a standard 52-card deck WITH replacement. What is the probability of drawing a heart on the first draw AND a spade on the second draw?

☐ A. $\frac{1}{16}$
☐ B. $\frac{1}{13}$

☐ C. $\frac{1}{4}$
☐ D. $\frac{1}{8}$

- 2) A spinner has 8 equal sections: 3 labeled A , 2 labeled B , 2 labeled C , and 1 labeled D . Find $P(A)$ as a fraction in lowest terms.



3)

The circle graph shows movie genre preferences. Blue is action (30%), salmon is drama (30%), green is comedy (15%), and purple is thriller (25%). If 1200 people were surveyed, how many prefer drama?

☐ A. 180
☐ B. 300

☐ C. 360
☐ D. 600



4) Simplify: $12p^{11} \div 4p^6$

☐ A. $3p^5$

☐ C. $8p^5$

☐ B. $3p^{17}$

☐ D. $3p^{66}$

5) A student is writing an equation for a word problem. The problem states: “A book club charges a \$10 membership and \$3 per book borrowed.” The student writes $3 + 10b = \text{total}$. What is the error?

☐ A. The constant 10 should be multiplied by b .

☐ C. The variable b should be a different letter.

☐ B. The coefficient 3 should be the constant term.

☐ D. There is no error; the equation is correct.

6) Find x using the step-by-step table:

Step	Equation
Original	$3x + 5 = 20$
Subtract 5	$3x = 15$
Divide by 3	$x = ?$

☐ A. $x = 3$

☐ C. $x = 9$

☐ B. $x = 5$

☐ D. $x = 15$

7) A store gives a \$5 coupon for every 6 items purchased. If you buy x bundles of 6 items, each bundle costs \$8, and your total before coupon is \$48, which equation represents your savings per bundle?

☐ A. $6(8 - 5) = 18$

☐ C. $6(8) - 5 = 48$

☐ B. $x(8 - 5) = 48$

☐ D. $(8 - 5)x = 18$



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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.EE.3-7.EE.4) Subtract 10: $-3x = -9$. Divide by -3 : $x = 3$.
- 2) **Choice C is correct.** (7.G.1-7.G.5) Multiply: $8 \times 2 = 16$ km.
- 3) **Choice C is correct.** (7.NS.1-7.NS.3) Area of a square = $s^2 = 8^2 = 64$ cm².
- 4) **Choice B is correct.** (7.NS.2) Three groups of -2 : $3 \times (-2) = -6$. The arrows move left 2 units, 3 times, landing on -6 .
- 5) **Choice B is correct.** (7.SP.1-7.SP.4) IQR ($Q_3 - Q_1$) captures the spread of the middle 50% of ordered data, spanning 12 units in this case.
- 6) **The correct answer is 384 .** (7.G.4-7.G.6) Base area = $\frac{1}{2}(5 + 11) \times 6 = \frac{1}{2} \times 16 \times 6 = 48$ in². Volume = $48 \times 8 = 384$ in³.
- 7) **Choice C is correct.** (7.SP.5-7.SP.8) Blue or red: $\frac{4}{8} = \frac{1}{2}$. Complement: $1 - \frac{1}{2} = \frac{1}{2} = \frac{4}{8}$.
- 8) **Choice C is correct.** (7.SP.5-7.SP.8) Numbers less than 4: $\{1, 2, 3\} = 3$ outcomes. Consonants: $\{W, X, Y, Z\} = 4$ outcomes. Favorable: $3 \times 4 = 9$ outcomes.
- 9) **Choice B is correct.** (7.SP.1-7.SP.4) $\frac{18}{120} = \frac{3}{20} = 0.15 = 15\%$.
- 10) **Choice A is correct.** (7.SP.6) Green: $\frac{240}{600} = 0.40$; Yellow: $\frac{200}{600} \approx 0.33$; Purple: $\frac{160}{600} \approx 0.27$. Green has the highest probability.
- 11) **Choice D is correct.** (7.SP.5-7.SP.8) $P(\text{no rain Mon}) = 1 - \frac{1}{4} = \frac{3}{4}$; $P(\text{no rain Tues}) = 1 - \frac{1}{3} = \frac{2}{3}$. Both: $\frac{3}{4} \cdot \frac{2}{3} = \frac{6}{12} = \frac{1}{2}$.
- 12) **Choice D is correct.** (7.RP.3) Percent error = $\frac{|3.5 - 4|}{4} \times 100\% = \frac{0.5}{4} \times 100\% = 12.5\%$.
- 13) **Choice B is correct.** (7.EE.1-7.EE.2) Distribute $\frac{3}{4}$: $\frac{3}{4}(4m) - \frac{3}{4}(8) = 3m - 6$.
- 14) **Choice D is correct.** (7.RP.3) Option 1: $A = 1000 + 1000(0.04)(5) = 1000 + 200 = \1200 . Option 2: $A = 1200 + 1200(0.03)(5) = 1200 + 180 = \1380 . Option 2 is higher.
- 15) **Choice D is correct.** (7.RP.3) Correct calculation: tax = $0.07 \times 85 = \$5.95$, final = $85 + 5.95 = \$90.95$. Student's error was treating 7% as the amount \$0.07 instead of computing 7% of the discounted price.
- 16) **Choice D is correct.** (7.NS.1b) Position = $-15 + 8 = -7$. She is still 7 feet below sea level (represented as -7).
- 17) **Choice A is correct.** (7.EE.1) $(6 + 2 - 4)x = 4x$ is correct. Combining all coefficients: $6 + 2 - 4 = 4$, so the answer is $4x$.
- 18) **The correct answer is A, C.** (7.G.4-7.G.6) Option A is correct (60 m²). Option C is correct (18 m²). The true total is $60 + 18 = 78$ m², so D and
- 19) **The correct answer is 157 .** (7.G.4-7.G.6) $V = \pi r^2 h \approx 3.14 \times (2.5)^2 \times 8 = 3.14 \times 6.25 \times 8 = 157$ m³.
- 20) **Choice C is correct.** (7.SP.1-7.SP.4) 35% of 260 = $0.35 \times 260 = 91$ students.
- 21) **Choice C is correct.** (7.RP.1-7.RP.3) Scale 1 : 4 means the new dimensions are $\frac{1}{4}$ of the original: $24 \div 4 = 6$ inches; $36 \div 4 = 9$ inches.
- 22) **Choice C is correct.** (7.RP.3) $\frac{40}{50} = \frac{4}{5} = 0.80 = 80\%$.
- 23) **Choice D is correct.** (7.EE.1-7.EE.2) Substitute: $2(4)^2 + 3 = 2(16) + 3 = 32 + 3 = 35$.
- 24) **Choice D is correct.** (7.RP.1-7.RP.3) Unit price = $\$4.50 \div 6 = \0.75 per apple.
- 25) **Choice B is correct.** (7.NS.1-7.NS.3) Using the chart: negative $\div$ positive = negative. So $(-15) \div 3 = -5$.
- 26) **Choice C is correct.** (7.NS.2d) Divide $3 \div 11 = 0.272727 \dots = 0.\overline{27}$. The denominator 11 produces a repeating 2-digit block.
- 27) **Choice A is correct.** (7.NS.1-7.NS.3) First 9 minutes: $9 \div \frac{3}{4} = 12$ laps. Next 7 minutes: $7 \div \frac{7}{8} = 8$ laps. Total: $12 + 8 = 20$ laps.
- 28) **The correct answer is 432 .** (7.SP.1-7.SP.4) The sample proportion is $\frac{18}{50}$. Use a proportion to estimate the population: $\frac{18}{50} = \frac{x}{1200}$. Cross-multiply: $50x = 21,600$, so $x = 432$ students. This estimate assumes the random sample is representative of all students.
- 29) **Choice B is correct.** (7.NS.1-7.NS.3) $0.0089 = 8.9 \times 10^{-3}$. The coefficient must satisfy $1 \leq a < 10$.



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Hi, Math Hero!

◇ This full-length book gave you ten complete Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. You showed up for Grade 7 practice again and again. That is what real growth looks like: steady effort, honest review, and a willingness to try. ◇

★ **Remember this:** A math hero is not someone who never misses a question. A math hero learns from the miss and comes back stronger. ★

Hero Habits

- **Courage:** You try problems that are not automatic.
- **Honesty:** You review what needs work.
- **Patience:** You let skills grow over time.
- **Pride:** You recognize the effort you gave.

Grade 7 test-day tip: Save one solved problem you are proud of. Looking back at progress helps motivation stay strong.

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

Jay Daie

Your Math Hero Guide

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes 10 full-length Math practice tests and 2 extra 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:

10 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
- ✓ Fractions & Decimals
- ✓ Percents
- ✓ Statistics & Probability
- ✓ Data Analysis
- ✓ Measurement & Conversions
- ✓ And More!



2 EXTRA 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!

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SUCCEED
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