

8

Ohio OST

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



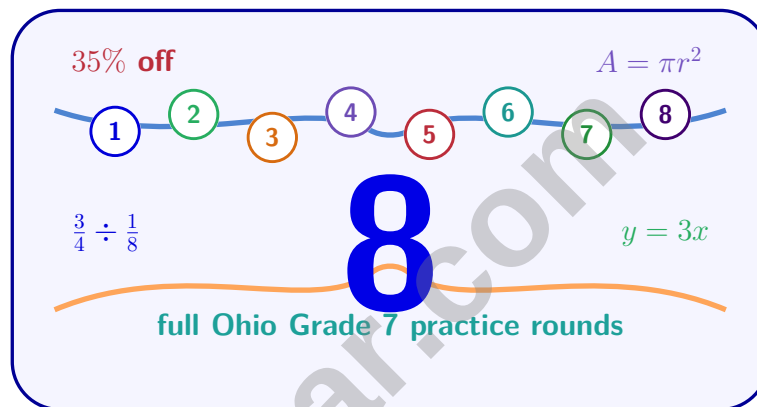
THINK SMARTER



BE TEST-READY

8 Ohio OST Grade 7 Math Practice Tests

A no-fluff workout in Ohio Grade 7 algebraic reasoning, proportional relationships, geometry, data displays, and simulations



Eight complete 40-question Grade 7 OST 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, Ohio Grade 7 Problem Solver!

Eight focused rounds for sharper OST math thinking

This book gives you eight full Grade 7 OST 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 Ohio 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.

Ohio 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 OST 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

Table of Contents

★ Practice Test 1	_____	15
★ Practice Test 2	_____	31
★ Practice Test 3	_____	46
★ Practice Test 4	_____	61
★ Practice Test 5	_____	76
★ Practice Test 6	_____	92
★ Practice Test 7	_____	107
★ Practice Test 8	_____	121
Practice Test Answer Keys	_____	137
Practice Test Answers and Explanations	_____	142

1) What is the coefficient of y in the simplified form of $-8y + 12y - 3y$?

☐ A. -8

☐ C. 1

☐ B. y

☐ D. 12

2) Which correctly identifies the repeating block in $\frac{1}{7}$?

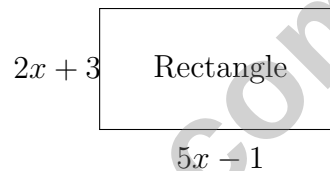
☐ A. $0.\overline{14}$

☐ C. $0.1\overline{428}$

☐ B. $0.1\overline{42857}$

☐ D. $0.\overline{7}$

3) A rectangle has width $(2x + 3)$ cm and length $(5x - 1)$ cm. What is the perimeter expression?



☐ A. $14x + 4$

☐ C. $10x - 2$

☐ B. $7x + 2$

☐ D. $14x + 2$

4) A phone company charges \$20 per month plus \$0.15 for each text message over the limit. If Marcus pays \$35.60 in a month, which equation could be used to find n , the number of text messages over the limit?

☐ A. $0.15n + 20 = 35.60$

☐ C. $20 + 35.60 = 0.15n$

☐ B. $20n + 0.15 = 35.60$

☐ D. $0.15 + 20n = 35.60$

5) What is x if $3(x - 2) = 9$?

☐ A. $x = 2$

☐ C. $x = 5$

☐ B. $x = 3$

☐ D. $x = 6$



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6) Solve for x : $5(x + 3) = 2x + 36$

☐ A. $x = 3$

☐ C. $x = 7$

☐ B. $x = 5$

☐ D. $x = 9$

7) Solve: $x - (-4) < 8$

☐ A. $x < 4$

☐ C. $x > 4$

☐ B. $x < 12$

☐ D. $x < 8$

8) Evaluate: $-3.6 + (-2.4)$

☐ A. -6.0

☐ C. 1.2

☐ B. -1.2

☐ D. 6.0

9) Identify the student error: $\frac{3}{7} \div \frac{2}{5} = \frac{3}{7} \times \frac{2}{5} = \frac{6}{35}$.

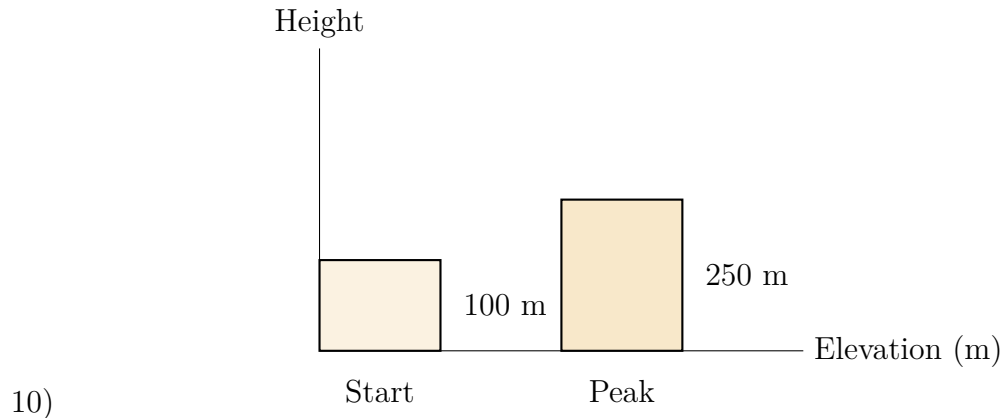
☐ A. No error; the answer is correct

☐ C. Error: forgot to flip the sign

☐ B. Error: should multiply by the reciprocal $\frac{5}{2}$, not $\frac{2}{5}$

☐ D. Error: should add, not divide





A hiker starts at 100 m elevation and reaches a peak at 250 m elevation. What is the elevation gain?

- ☐ A. 150 m
 ☐ C. 250 m
☐ B. 200 m
 ☐ D. -150 m

11) Which expression is NOT equal to y^6 ?

- ☐ A. $y^3 \cdot y^3$
☐ C. $\frac{y^{10}}{y^4}$
☐ B. $(y^2)^3$
☐ D. $y^2 \cdot y^3$

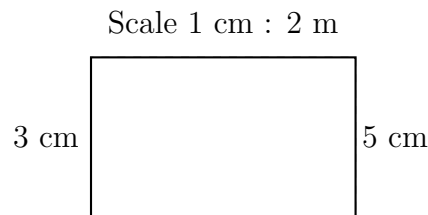
12) An investment grows from \$900 to \$1,059.48 in 2 years with annual compound interest. Find the interest rate as a decimal.



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- 1) A bank account loss of \$168 is distributed equally among 7 months. What is the loss per month?

☐ A. \$24 per month ☐ C. \$168 per month
☐ B. -\$24 per month ☐ D. Undefined



2)

What is the perimeter of the actual rectangle?

☐ A. 16 m ☐ C. 64 m
☐ B. 32 m ☐ D. 128 m

- 3) Calculate: $3\frac{3}{4} - 1\frac{1}{2}$

☐ A. $1\frac{1}{4}$ ☐ C. $2\frac{1}{2}$
☐ B. $2\frac{1}{4}$ ☐ D. $2\frac{3}{4}$

- 4) What is the value of 5^0 ?

☐ A. 0 ☐ C. 5
☐ B. 1 ☐ D. Undefined

- 5) A ceiling fan needs to be painted. The fan blades form a shape: a central square (6 inches by 6 inches) with four rectangles attached (each 2 inches by 8 inches). What is the total area to be painted in square inches?



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- 6) A cylindrical glass has a diameter of 6 cm and a height of 10 cm. What is the lateral surface area of the glass? Use $\pi \approx 3.14$.

- 7) Which expression is equivalent to $2(4y - 1) + 3y$?

☐ A. $8y - 2 + 3y = 11y - 2$

☐ C. $11y - 1$

☐ B. $8y + 1$

☐ D. $4y + 2$

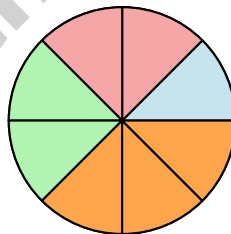
- 8) A back-to-back stem-and-leaf plot compares the heights of two basketball teams. The stem represents tens of inches. For Team A, stem 7 has leaves 0, 2, 4, 6 (on the left). For Team B, stem 7 has leaves 1, 3, 5, 8 (on the right). How many players are in the 70–79 inch range in total?

☐ A. 4 players

☐ C. 12 players

☐ B. 8 players

☐ D. 16 players



9)

A spinner has 8 equal sections: 1 blue, 2 red, 2 green, and 3 yellow. What is the probability of landing on yellow?

☐ A. $\frac{1}{8}$

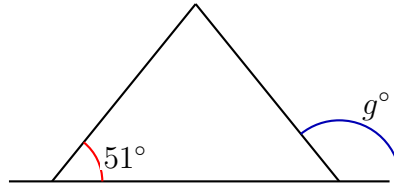
☐ C. $\frac{3}{8}$

☐ B. $\frac{2}{8}$

☐ D. $\frac{1}{2}$



1)



Two rays extend upward from a horizontal line, forming angles of 51° and g° . These angles are supplementary. What is the measure of angle g ?

☐ A. 39°
☐ C. 129°
☐ B. 51°
☐ D. 139°

2) A spinner has 12 equal sections colored: 4 green, 5 blue, 3 red. Find $P(\text{blue or red})$.

☐ A. $\frac{3}{12}$
☐ C. $\frac{2}{3}$
☐ B. $\frac{5}{12}$
☐ D. $\frac{7}{12}$

3) Given raw data: 51, 54, 58, 61, 64, 68, 71, 75. In a stem-and-leaf plot, what is the correct representation?

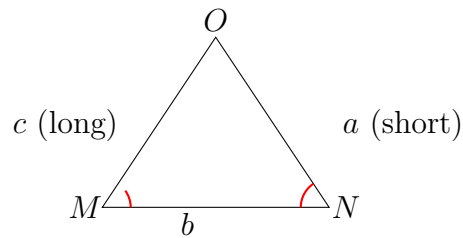
☐ A. Stem 5: 1, 4, 8; Stem 6: 1, 4, 8; Stem 7: 1, 5

☐ C. Stem 5: 1, 4, 8; Stem 6: 1, 4; Stem 7: 1, 5, 8

☐ B. Stem 5: 1, 4, 5, 8; Stem 6: 1, 4; Stem 7: 1, 5

☐ D. Stem 5: 51, 54, 58; Stem 6: 61, 64; Stem 7: 71, 75


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4)

A triangle has sides labeled a (short), b (medium), and c (long). The angle opposite the shortest side is:

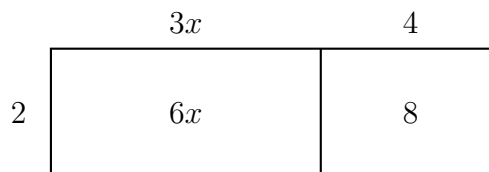
- ☐ A. Always 60°
☐ C. The smallest angle
☐ B. The largest angle
 ☐ D. Exactly 90°

5) Maria guessed that a book weighs 2 pounds, but it actually weighs 2.5 pounds. What is the percent error?

- ☐ A. 80%
 ☐ C. 50%
☐ B. 25%
 ☐ D. 20%

6) A blueprint for a kitchen has dimensions of 3.2 inches by 2.8 inches with a scale of 1 inch = 3 feet. What is the actual area of the kitchen in square feet?

7) Which expression is equivalent to $2(3x + 4)$? The diagram shows the split:



- ☐ A. $6x + 4$
☐ C. $5x + 6$
☐ B. $6x + 8$
☐ D. $3x + 8$



Ohio OST 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 Ohio OST practice test.



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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice C is correct.** (7.EE.1) Simplify: $(-8 + 12 - 3)y = 1y = y$. The coefficient of y is 1.
- 2) **Choice B is correct.** (7.NS.2d) Divide $1 \div 7 = 0.142857142857 \dots$. The block 142857 repeats.
- 3) **Choice A is correct.** (7.EE.1-7.EE.2) Perimeter = $2(5x - 1) + 2(2x + 3) = 10x - 2 + 4x + 6 = 14x + 4$.
- 4) **Choice A is correct.** (7.EE.4a) Base charge is \$20; each extra text adds \$0.15. So $0.15n + 20 = 35.60$.
- 5) **Choice C is correct.** (7.EE.3-7.EE.4) Divide by 3: $x - 2 = 3$. Add 2: $x = 5$.
- 6) **Choice C is correct.** (7.EE.4a) Distribute: $5x + 15 = 2x + 36$. Subtract $2x$: $3x + 15 = 36$. Subtract 15: $3x = 21$. Divide by 3: $x = 7$.
- 7) **Choice A is correct.** (7.EE.4b) Rewrite as $x + 4 < 8$. Subtract 4: $x < 4$.
- 8) **Choice A is correct.** (7.NS.1-7.NS.3) Adding two negatives: $-3.6 + (-2.4) = -(3.6 + 2.4) = -6.0$.
- 9) **Choice B is correct.** (7.NS.1-7.NS.3) Correct: $\frac{3}{7} \div \frac{2}{5} = \frac{3}{7} \times \frac{5}{2} = \frac{15}{14}$, not $\frac{6}{35}$.
- 10) **Choice A is correct.** (7.NS.1-7.NS.3) Elevation gain: $250 - 100 = 150$ meters.
- 11) **Choice D is correct.** (7.EE.1-7.EE.2) Check: A is $y^3 \cdot y^3 = y^6$ ✓; B is $(y^2)^3 = y^6$ ✓; C is $\frac{y^{10}}{y^4} = y^6$ ✓; D is $y^2 \cdot y^3 = y^5$ ✗.
- 12) **The correct answer is 0.08.** (7.RP.3) $900(1 + r)^2 = 1059.48 \Rightarrow (1 + r)^2 = 1.1772 \Rightarrow 1 + r = 1.08 \Rightarrow r = 0.08$.
- 13) **Choice D is correct.** (7.EE.3-7.EE.4) Sale price = $0.75p = 48 \Rightarrow p = \frac{48}{0.75} = 64$.
- 14) **Choice C is correct.** (7.G.1-7.G.5) The vertical leg of the left triangle is 4 ft, and the right triangle's vertical leg is 3.2 ft. Scale factor = $\frac{3.2}{4} = 0.8$. The horizontal leg of the right triangle is $5 \times 0.8 = 4$ ft.
- 15) **Choice A is correct.** (7.SP.5-7.SP.8) Since $P(\text{Win}) + P(\text{Lose}) = 1$, we have $P(\text{Lose}) = 1 - 0.75 = 0.25$. (Negative probabilities are undefined.)
- 16) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute: $4x + 8 - (x - 5) = 4x + 8 - x + 5$. Combine: $(4x - x) + (8 + 5) = 3x + 13$.
- 17) **Choice A is correct.** (7.SP.3) The New Method has a higher median (78 vs. 75), suggesting better average performance. However, its larger range (35 vs. 25) indicates less consistency. Trade-off: higher average but more variability.
- 18) **Choice D is correct.** (7.RP.3) Sales tax = $0.09 \times 150 = \$13.50$. Final cost = $150 + 13.50 = \$163.50$.
- 19) **Choice A is correct.** (7.NS.2) $-1\frac{1}{2} = -\frac{3}{2}$. So $-\frac{3}{2} \times 6 = \frac{-18}{2} = -9$.
- 20) **Choice D is correct.** (7.RP.1-7.RP.3) Markup: $50\% \times 8 = 4$. Selling price: $8 + 4 = 12$.
- 21) **Choice C is correct.** (7.G.4-7.G.6) Volume of a prism = base area $\times$ height = $15 \times 10 = 150 \text{ cm}^3$.
- 22) **The correct answer is B, D.** (7.NS.1-7.NS.3) B: $-33 + 33 = 0$ (opposites sum to zero). D: $-100 + 100 = 0$ (opposites sum to zero). A: $20 + (-10) = 10$ (not zero). C: $14 + (-7) = 7$ (not zero).
- 23) **Choice C is correct.** (7.G.1-7.G.5) Knowing only the three angles determines the shape (similarity), not the size. Infinitely many triangles with angles $40^\circ, 60^\circ, 80^\circ$ exist at different scales.
- 24) **Choice A is correct.** (7.G.4-7.G.6) The radius is any segment from the center to the circle. OP is labeled and is a radius.
- 25) **The correct answer is (6, 7).** (7.NS.1-7.NS.3) $6^2 = 36$ and $7^2 = 49$. Since $36 < 40 < 49$, the answer is between 6 and 7.
- 26) **Choice C is correct.** (7.G.1-7.G.5) The vertex L may lie anywhere on a line parallel to JK at distance 3 cm above it. Each position yields a different triangle with the same base and height but different side lengths and angles.
- 27) **The correct answer is $8\frac{1}{4}$.** (7.NS.1-7.NS.3) Total distance = $4\frac{1}{2} + 3\frac{3}{4} = \frac{9}{2} + \frac{15}{4} = \frac{18}{4} + \frac{15}{4} = \frac{33}{4} = 8\frac{1}{4}$ miles.
- 28) **Choice B is correct.** (7.SP.1-7.SP.4) East: $\frac{56}{200} = 0.28$ or 28%; West: $\frac{36}{150} = 0.24$ or 24%; North: $\frac{70}{250} = 0.28$ or 28%. West is lowest.
- 29) **Choice D is correct.** (7.RP.1-7.RP.3) For $C = 3b$, the line must pass through the origin. Graph A passes through $(0, 0)$, $(1, 3)$, and $(2, 6)$. Graph B does not pass through the origin.
- 30) **Choice D is correct.** (7.RP.3) To find 38% of 210, set percent over 100 equal to part over whole: $\frac{38}{100} = \frac{x}{210}$. Cross-multiply: $x \approx 80$.



You Know More Than You Think

Hi, Skilled Learner!

◇ After working through Grade 7 practice, you now have more tools than you may realize: models, formulas, graphs, equations, and reasoning habits. ◇

★ **Remember this:** The next step is learning when to use each tool. That comes from practice, review, and the courage to try a method even when you are unsure. This version gave you 8 opportunities to rehearse test-day habits. ★

Tools You Can Use

- **Models:** Make relationships visible.
- **Equations:** Represent unknowns clearly.
- **Graphs:** Show change and location.
- **Formulas:** Organize measurement problems.

Grade 7 test-day tip: Before solving, name the tool you plan to use. That small choice makes your work more intentional.

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

Jay Daie

Your Skill-Building 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

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



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