

10 Ohio OST

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



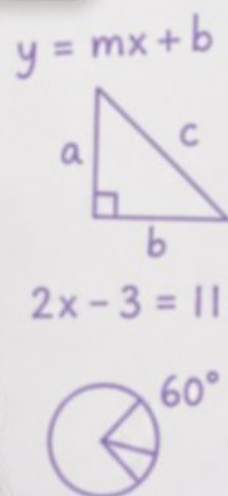
DETAILED ANSWER EXPLANATIONS

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 Ohio OST Grade 7 Math Practice Tests

Ohio Grade 7 OST Practice for well-rounded review of proportional reasoning, percent change, expressions, geometry, statistics, and chance



Ten 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!

Ten focused rounds for sharper Ohio OST math thinking

This book gives you ten 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

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.

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?

Ten Ohio OST 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 Ohio 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) Simplify: $(r^5)^3$

☐ A. r^8

☐ B. r^{15}

☐ C. r^{125}

☐ D. r^{30}

2) Solve: $0.5x + 3.5 = 8.5$

☐ A. $x = 5$

☐ B. $x = 10$

☐ C. $x = 12$

☐ D. $x = 14$

3) Which product is the smallest?

☐ A. 5×2

☐ B. $(-5) \times 3$

☐ C. $5 \times (-2)$

☐ D. $(-5) \times (-2)$

4) Simplify: $3(2x - 5) + 2(x + 4)$.

☐ A. $6x - 15 + 2x + 8 = 8x - 7$

☐ B. $8x - 7$

☐ C. $8x + 20$

☐ D. $5x - 1$

5) A box contains tiles labeled with numbers 2, 4, 6, 8, 10, 12, 14, 16. A tile is drawn at random. What is the probability of drawing a number greater than 8?

☐ A. $\frac{1}{2}$

☐ B. $\frac{5}{8}$

☐ C. $\frac{3}{8}$

☐ D. $\frac{1}{4}$

6) An ice cream shop offers 4 cone types (Sugar, Cake, Waffle, Chocolate) and 10 flavors. When ordering with cone and flavor, how many total combinations exist?

☐ A. 14

☐ B. 20

☐ C. 35

☐ D. 40



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- 7) Two number cubes are rolled. What is the probability of rolling doubles (both dice show the same number)?
- ☐ A. $\frac{1}{6}$ ☐ C. $\frac{1}{12}$
☐ B. $\frac{7}{36}$ ☐ D. $\frac{5}{36}$
- 8) A charity conducted a phone survey calling 500 households. 340 people answered and agreed to participate. Based on this experimental data, what is the probability that a randomly called household will answer and agree?
- ☐ A. $\frac{340}{500}$ ☐ C. 0.32
☐ B. $\frac{17}{50}$ ☐ D. $\frac{160}{500}$
- 9) A photographer estimated 180 photos would be taken at an event, but 200 were actually taken. What is the percent error?
- ☐ A. 20% ☐ C. 11.1%
☐ B. 9% ☐ D. 10%
- 10) Expand: $5(3y - 2)$
- ☐ A. $15y - 2$ ☐ C. $15y - 10$
☐ B. $8y - 7$ ☐ D. $3y - 10$
- 11) An investment of \$3000 earns \$270 in simple interest over 2 years. What is the annual interest rate?
- ☐ A. 3% ☐ C. 5%
☐ B. 9% ☐ D. 4.5%

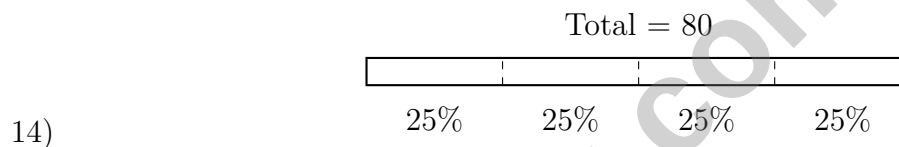


- 12) A robot starts at position 0 on a number line. It moves left 8 units, then right 3 units. What is its final position?

☐ A. -11 ☐ C. 5
☐ B. -5 ☐ D. 11

- 13) A dollhouse is built to a scale of 1 : 12 (model to real). If an actual bedroom is 12 feet long, 10 feet wide, and 8 feet tall, what is the volume of the dollhouse bedroom in cubic feet?

☐ A. 960×12 cubic feet ☐ C. 960 cubic feet
☐ B. $\frac{960}{12}$ cubic feet ☐ D. $\frac{960}{1728}$ cubic feet



The bar model shows a number divided into equal parts. What is 25% of 80?

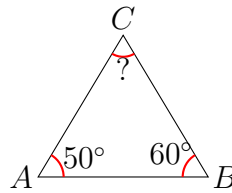
☐ A. 15 ☐ C. 25
☐ B. 30 ☐ D. 20

- 15) A sports equipment store mistakenly labels a pair of shoes at \$72 after applying what they thought was a 20% discount to a \$90 cost. What discount rate was actually applied to reach \$72?

☐ A. 15% ☐ C. 20%
☐ B. 18% ☐ D. 25%



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1)

Two angles of a triangle are 50° and 60° . What is the third angle?

☐ A. 70° ☐ C. 30° ☐ B. 110° ☐ D. 180°

2) A back-to-back stem-and-leaf plot shows January and July temperatures. If stem 7 appears for both months with January leaves 1, 4, 8 and July leaves 3, 5, 7, 9, which month has greater variation within stem 7?

☐ A. January (greater spread)☐ C. Both have equal spread☐ B. July (greater spread)☐ D. Cannot determine from stem alone

3) A rectangular prism has a length of 20 cm. The width is half the length. The height is 10 cm. What is the volume?

☐ A. $1,200 \text{ cm}^3$ ☐ C. $4,000 \text{ cm}^3$ ☐ B. $2,000 \text{ cm}^3$ ☐ D. $2,400 \text{ cm}^3$

4) Which expression is equivalent to $-(4x - 7)$?

☐ A. $-4x - 7$ ☐ C. $4x - 7$ ☐ B. $-4x + 7$ ☐ D. $4x + 7$ 

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5) Simplify: $4m^2 + 7m + 2m^2 - 3m$

☐ A. $6m^2 + 4m$

☐ B. $6m^3 + 4m$

☐ C. $11m^2 + 4m$

☐ D. $6m^2 - m$

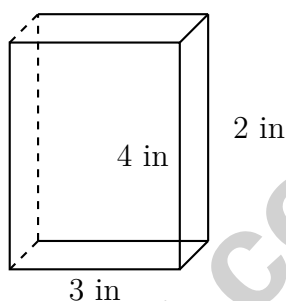
6) Which factorization is incorrect?

☐ A. $-3x - 9 = -3(x + 3)$

☐ B. $-2y + 8 = 2(-y + 4)$

☐ C. $-5a + 15 = -5(a + 3)$

☐ D. $-4m - 20 = -4(m + 5)$



7)

The rectangular prism shown has dimensions 3 in $\times$ 2 in $\times$ 4 in. What is its surface area?

☐ A. 32 in^2

☐ B. 52 in^2

☐ C. 64 in^2

☐ D. 96 in^2

8) Which expression represents “8 times the sum of x and 3”?

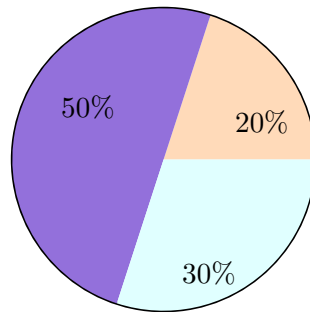
☐ A. $8x + 3$

☐ B. $8(x + 3)$

☐ C. $(8 + x) + 3$

☐ D. $8 + x + 3$





1)

The circle graph displays energy sources for a town. Peachpuff is coal (20%), purple is renewable (50%), and cyan is natural gas (30%). If the town uses 5000 MW total, how much comes from renewable?

☐ A. 1000☐ C. 2500☐ B. 1500☐ D. 40002) Simplify: $(15h - 10) - (8h - 4)$ ☐ A. $7h - 6$ ☐ C. $23h - 6$ ☐ B. $7h - 14$ ☐ D. $15h - 4$ 3) Simplify $14s^7 \div 7s^3$:☐ A. $2s^4$ ☐ C. $2s^{21}$ ☐ B. $2s^{10}$ ☐ D. $7s^4$

4) An online store charges \$9.99 per item plus a fixed shipping cost of \$5.99. If the total order is \$54.95, how many items were ordered? Which equation is correct?

☐ A. $5.99x + 9.99 = 54.95$ ☐ C. $9.99x + 5.99 = 54.95$ ☐ B. $9.99 + 5.99x = 54.95$ ☐ D. $x(9.99 + 5.99) = 54.95$ 

5) 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. $x = 15$

6) A rectangle has width x and length $2x + 3$. If the perimeter is 36 cm, what is the width?

☐ A. $x = 4$ cm

☐ C. $x = 6$ cm

☐ B. $x = 5$ cm

☐ D. $x = 8$ cm

7) Solve: $\frac{2}{3}x + 4 = 10$ and verify using the reciprocal property.

☐ A. $x = 3$

☐ C. $x = 9$

☐ B. $x = 6$

☐ D. $x = 12$

8) A school has 800 students. The principal wants to estimate the average number of hours students spend watching videos online per week. She randomly selects 60 students and finds the mean is 8.5 hours per week. Based on the sample, what is the estimated average number of hours all 800 students spend watching videos online per week?



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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 B is correct.** (7.EE.1-7.EE.2) Power rule: $(r^5)^3 = r^{5 \times 3} = r^{15}$.
- 2) **Choice B is correct.** (7.EE.3-7.EE.4) Subtract 3.5: $0.5x = 5$. Divide by 0.5 (or multiply by 2): $x = 10$.
- 3) **Choice B is correct.** (7.NS.2) A: $5 \times 2 = 10$. B: $(-5) \times 3 = -15$. C: $5 \times (-2) = -10$. D: $(-5) \times (-2) = 10$. The smallest is -15 (only B).
- 4) **Choice B is correct.** (7.EE.1-7.EE.2) Distribute: $6x - 15 + 2x + 8$. Combine: $(6x + 2x) + (-15 + 8) = 8x - 7$.
- 5) **Choice A is correct.** (7.SP.5-7.SP.8) Numbers greater than 8: 10, 12, 14, 16 (4 out of 8). $P(> 8) = \frac{4}{8} = \frac{1}{2}$.
- 6) **Choice D is correct.** (7.SP.5-7.SP.8) Cone types: 4; flavors: 10. Total: $4 \times 10 = 40$ combinations.
- 7) **Choice A is correct.** (7.SP.5-7.SP.8) Doubles: (1,1), (2,2), (3,3), (4,4), (5,5), (6,6) = 6 outcomes out of 36. Probability = $\frac{6}{36} = \frac{1}{6}$.
- 8) **Choice A is correct.** (7.SP.6) Experimental probability = $\frac{340}{500}$. This simplifies to $\frac{17}{25} = 0.68$. Option A gives the most direct form from the observed data.
- 9) **Choice D is correct.** (7.RP.3) Percent error = $\frac{|180-200|}{200} \times 100\% = \frac{20}{200} \times 100\% = 10\%$.
- 10) **Choice C is correct.** (7.EE.1-7.EE.2) Distribute 5: $5(3y) - 5(2) = 15y - 10$.
- 11) **Choice D is correct.** (7.RP.3) $270 = 3000 \times r \times 2 \Rightarrow 270 = 6000r \Rightarrow r = 0.045 = 4.5\%$.
- 12) **Choice B is correct.** (7.NS.1-7.NS.3) Moving left 8 units: $0 - 8 = -8$. Moving right 3 units: $-8 - (-3) = -8 + 3 = -5$. Or: $-8 + 3 = -5$.
- 13) **Choice D is correct.** (7.RP.1-7.RP.3) Linear scale is 1 : 12. Model dimensions: 1 ft, $\frac{10}{12}$ ft, $\frac{8}{12}$ ft. Volume scales by $(1/12)^3 = 1/1728$. Real volume is $12 \times 10 \times 8 = 960$ cu ft. Model volume = $960 \div 1728 = \frac{960}{1728}$ cu ft.
- 14) **Choice D is correct.** (7.RP.3) 25% of 80 is $\frac{1}{4} \times 80 = 20$.
- 15) **Choice C is correct.** (7.RP.3) If original is \$90 and sale price is \$72, then discount = $(90 - 72)/90 = 18/90 = 0.20 = 20\%$.
- 16) **Choice A is correct.** (7.EE.1) Simplify the left side: $(12 - 5 + 3)a = 10a$, which equals the right side. Both expressions are equivalent.
- 17) **Choice A is correct.** (7.EE.1-7.EE.2) GCF of $18ab$ and $27a$ is $9a$. Factor: $18ab + 27a = 9a(2b + 3)$.
- 18) **Choice D is correct.** (7.NS.1b) New altitude = $35000 + (-2000) = 33000$ feet. The plane's altitude decreased by 2000 feet.
- 19) **The correct answer is Department P.** (7.SP.3) A smaller range indicates salary consistency and predictability; candidates can rely on a specific salary range. A larger range creates uncertainty. The distribution shape (spread) affects how clearly you can communicate typical outcomes.
- 20) **Choice B is correct.** (7.EE.1-7.EE.2) Three times k is $3k$. Minus 7 gives $3k - 7$.
- 21) **Choice C is correct.** (7.EE.4b) Multiply both sides by 3: $x \geq 6$. The inequality sign stays the same because we multiply by a positive.
- 22) **The correct answer is A,D.** (7.G.4-7.G.6) A is correct because $V = Bh$, so $h = V/B$. D is correct because volume is measured in cubic units. B is false because $2 \times 3 \times 5 = 30 \text{ m}^3$, not 10 m^3 . C is false because the base shape affects the base area.
- 23) **The correct answer is 2.** (7.SP.1-7.SP.4) Compute $75 - 73 = 2$.
- 24) **Choice A is correct.** (7.SP.1-7.SP.4) Red (Italian) is 30% of 400 = $0.30 \times 400 = 120$ customers.
- 25) **Choice D is correct.** (7.RP.1-7.RP.3) For $y = 5x$, substituting $x = 3$ gives $y = 5 \times 3 = 15$. So (3, 15) lies on the line. The student made an error in their calculation or reasoning.
- 26) **Choice C is correct.** (7.RP.3) Rent = $50\% \times \$1,200 = 0.50 \times 1200 = \600 .
- 27) **Choice A is correct.** (7.NS.1-7.NS.3) Regroup the whole and fraction: $4\frac{1}{4} = 3 + 1\frac{1}{4} = 3\frac{5}{4}$. Subtract: $3\frac{5}{4} - 1\frac{3}{4} = 2\frac{2}{4} = 2\frac{1}{2}$.
- 28) **Choice A is correct.** (7.NS.1-7.NS.3) (A) Neg $\div$ neg = pos: $(-18) \div (-9) = 2$. (B) Neg $\div$ pos = neg. (C) Pos $\div$ neg = neg. (D) Neg $\div$ pos = neg.
- 29) **The correct answer is 60.** (7.SP.1-7.SP.4) Sum the frequencies: $8 + 14 + 18 + 12 + 8 = 60$ people.



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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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SOLVE
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SUCCEED
BRIGHTLY

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