

8

Indiana I LEARN

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



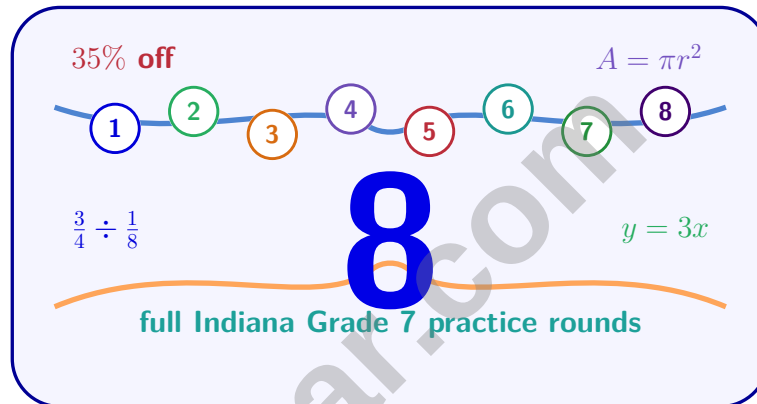
THINK SMARTER



BE TEST-READY

8 Indiana ILEARN Grade 7 Math Practice Tests

A sharper look at Indiana Grade 7 ratios, equations, surface area, volume, statistics, and theoretical probability



Eight complete 40-question Grade 7 ILEARN 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, Indiana Grade 7 Problem Solver!

Eight focused rounds for sharper ILEARN math thinking

This book gives you eight full Grade 7 ILEARN 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 Indiana 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.

Indiana 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 ILEARN 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

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- 1) Two histograms show daily temperature (in degrees Fahrenheit) over a month for City A and City B. City A's temperatures cluster at 70–75 degrees (range 5 degrees). City B's temperatures span 50–90 degrees (range 40 degrees). Where do the distributions overlap?

- ☐ A. City A has more variable temperatures
- ☐ B. City B is always hotter than City A
- ☐ C. Distributions overlap at 70–75 degrees; City A is more consistent
- ☐ D. City B never reaches City A's temperature

- 2) What is $\frac{1}{5} \div \frac{1}{3}$?

- ☐ A. $\frac{1}{15}$
- ☐ B. $\frac{3}{5}$
- ☐ C. $\frac{3}{15}$
- ☐ D. $\frac{1}{15}$

- 3) Which fraction in simplest form equals 0.8?

- ☐ A. $\frac{4}{5}$
- ☐ B. $\frac{3}{5}$
- ☐ C. $\frac{4}{50}$
- ☐ D. $\frac{2}{25}$

- 4) A runner's time improves by 2.4 seconds each month for 3 months. What is the total improvement?

- ☐ A. 2.4 seconds
- ☐ B. 7.2 seconds
- ☐ C. 5.4 seconds
- ☐ D. 7.8 seconds

- 5) 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. $C = 0.10x + 25$
- ☐ B. $C = 25x + 0.10$
- ☐ C. $C = 0.10 + 25x$
- ☐ D. $C = 25(x + 0.10)$



6) Find x : $5(x - 1) = 20$

☐ A. $x = 2$

☐ B. $x = 4$

☐ C. $x = 5$

☐ D. $x = 8$

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

☐ A. $x = 3$

☐ B. $x = 5$

☐ C. $x = 7$

☐ D. $x = 9$

8) Account balance was $-\$45$ (overdrawn). After a deposit of $\$100$, what is the new balance?

9) Solve: $4x - 9 = -1$ and verify by substituting back.

☐ A. $x = -2$

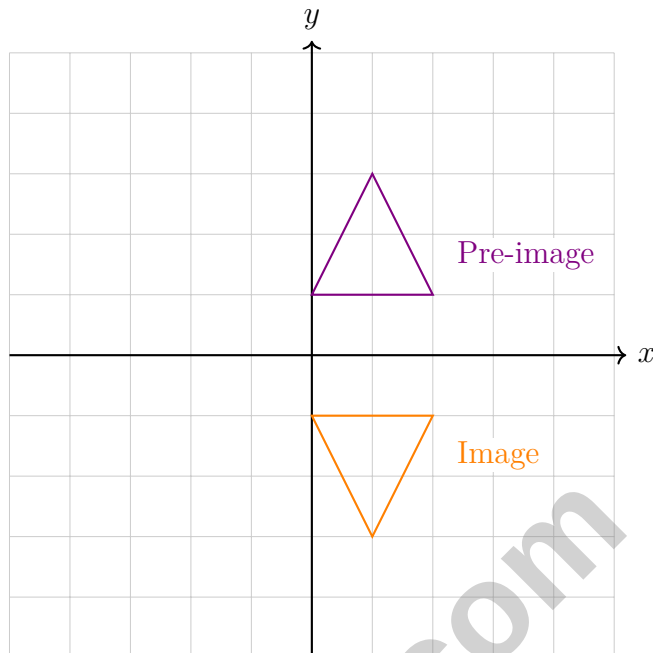
☐ B. $x = 0$

☐ C. $x = 2$

☐ D. $x = 4$



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10)

Which transformation maps the purple triangle to the orange triangle?

- ☐ A. Reflection over the x -axis ☐ C. Translation by $(0, -2)$
☐ B. Reflection over the y -axis ☐ D. Rotation of 90° clockwise

11) The mass of an electron is approximately 9.1×10^{-31} kg. Which best describes this value?

- ☐ A. A very large mass ☐ C. About 9 kg
☐ B. A very small mass ☐ D. About 91 grams

12) Between which two consecutive integers does $\sqrt{40}$ lie? (Write your answer in the form “between a and b ”)



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

☐ A. -8

☐ C. 1

☐ B. y

☐ D. 12

2) A shop charges \$5 per pizza and then adds a delivery fee. If 4 pizzas plus delivery cost \$28 total, what is the delivery fee?

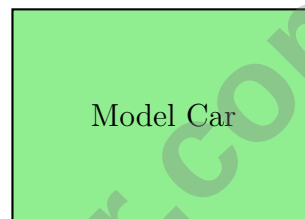
☐ A. \$3

☐ C. \$8

☐ B. \$5

☐ D. \$12

Scale 1 : 32



Length: 8 cm

3)

A scale model of a car is built at a scale of 1 : 32. If the model is 8 cm long, what is the actual length of the car in meters?

☐ A. 1.28 m

☐ C. 25.6 m

☐ B. 2.56 m

☐ D. 256 m

4) Which of the following shows that $0.9p = p - 0.1p$?

☐ A. Factoring: $p - 0.1p = p(1 - 0.1) = 0.9p$

☐ C. Combining fractions: $0.9 + 0.1 = 1$

☐ D. All operations are equivalent

☐ B. Distribution: $0.1(p - p) = 0$



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5) Temperature drops 20 degrees from 10 degrees. Express the drop (change) as a signed number.

- ☐ A. 20 (ignores the direction of change) ☐ D. -20 (correct; drop is negative change)
☐ B. 30 (adds instead of subtracts)
☐ C. -10 (starting temperature)

6) A six-sided die has the faces labeled 1, 1, 2, 4, 5, 6 (one face shows 1 twice and there is no 3). Each face is equally likely. What is the probability of rolling a 1 or 2?

- ☐ A. $\frac{1}{2}$ ☐ C. $\frac{1}{4}$
☐ B. $\frac{2}{6}$ ☐ D. $\frac{4}{6}$

7) A spinner with sections 1, 2, 3 is spun, and a coin is flipped. What is the probability of getting a number greater than 1 and a Tails?

- ☐ A. $\frac{1}{6}$ ☐ C. $\frac{2}{3}$
☐ B. $\frac{1}{3}$ ☐ D. $\frac{1}{2}$

8) A back-to-back stem-and-leaf plot compares writing scores of two 7th-grade classes. Class 1 (left): Stem 7: Leaves 2, 5, 8, 9 | Stem 8: Leaves 1, 4, 7. Class 2 (right): Stem 7: Leaves 3, 4 | Stem 8: Leaves 0, 2, 5, 6, 8. Which statement is true?

- ☐ A. Class 1 has more students with scores in the 70s ☐ C. Both classes have the same number of students
☐ B. Class 2 has more students with scores in the 80s ☐ D. Class 1 has the highest single score



1) Simplify: $(6n + 4) - (3n - 2)$

☐ A. $3n + 6$

☐ C. $9n + 2$

☐ B. $3n + 2$

☐ D. $3n - 6$

2) A histogram shows the same data displayed in two different ways: Version A uses intervals of width 5 (0–5, 5–10, 10–15, etc.), while Version B uses intervals of width 10 (0–10, 10–20, 20–30, etc.). How would the two histograms appear different?

☐ A. Version A would show more detail and variation; Version B would show a smoother pattern

☐ C. Version B would be more accurate because larger intervals are always better

☐ B. Both histograms would look identical regardless of interval width

☐ D. Version A would have fewer bars but higher frequencies

3) A bag contains 3 red marbles, 5 blue marbles, and 2 green marbles. Which probability is correct?

☐ A. $P(\text{blue}) = \frac{2}{10}$

☐ C. $P(\text{green}) = \frac{1}{2}$

☐ B. $P(\text{red}) = \frac{3}{10}$

☐ D. $P(\text{not red}) = \frac{6}{10}$

4) A playground is shaped like a large rectangle with three smaller rectangles removed. The large rectangle is 20 m $\times$ 15 m. The three removed rectangles are each 3 m $\times$ 2 m. What is the remaining area?

☐ A. 282 m²

☐ C. 318 m²

☐ B. 300 m²

☐ D. 336 m²



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5) Compute $3 + (-11)$.

☐ A. 14

☐ C. -8

☐ B. 8

☐ D. -14

6) If you have -5 dollars (meaning you owe 5 dollars) and you lose an additional 12 dollars, what is your new balance? Express your answer as an integer with the appropriate sign.

7) Simplify: $6x^2y + 3x^2y - 2x^2y$

☐ A. $7x^2y$

☐ C. $7x^4y$

☐ B. $11x^2y$

☐ D. $4x^2y$

8) Which expression is equivalent to $-3(2x + 5)$?

☐ A. $-6x - 15$

☐ C. $6x - 15$

☐ B. $-6x + 15$

☐ D. $-6x + 5$

9) If a sector measures 288° , what percent of the circle does it represent?

☐ A. 72%

☐ C. 80%

☐ B. 75%

☐ D. 88%



Indiana ILEARN 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 Indiana ILEARN practice test.

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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice C is correct.** **(7.SP.3)** City A clusters at 70–75 (range 5), indicating consistency. City B spans 50–90 (range 40), showing high variability. Both distributions include temperatures 70–75 degrees, so they overlap there.
- 2) **Choice B is correct.** **(7.NS.1-7.NS.3)** $\frac{1}{5} \div \frac{1}{3} = \frac{1}{5} \times \frac{3}{1} = \frac{3}{5}$.
- 3) **Choice A is correct.** **(7.NS.2d)** Both $0.8 = \frac{8}{10} = \frac{4}{5}$ (in simplest form). The answer is A, the fully simplified fraction.
- 4) **Choice B is correct.** **(7.NS.1-7.NS.3)** Improvement of 2.4 sec/month $\times$ 3 months = 7.2 seconds total.
- 5) **Choice A is correct.** **(7.EE.4a)** First 100 copies cost \$25 plus \$0.10 per additional copy. Formula: $C = 0.10x + 25$.
- 6) **Choice C is correct.** **(7.EE.3-7.EE.4)** Divide by 5: $x - 1 = 4$. Add 1: $x = 5$.
- 7) **Choice C is correct.** **(7.EE.4a)** Distribute: $5x + 15 = 2x + 36$. Subtract 2x: $3x + 15 = 36$. Subtract 15: $3x = 21$. Divide by 3: $x = 7$.
- 8) **The correct answer is \$55.** **(7.NS.1b)** $-45 + 100 = 55$ dollars. The balance became positive after the deposit covered the overdraft and added extra funds.
- 9) **Choice C is correct.** **(7.EE.3-7.EE.4)** Add 9: $4x = 8$. Divide by 4: $x = 2$. Check: $4(2) - 9 = 8 - 9 = -1$ ✓. Reasonable: positive result minus larger value gives negative.
- 10) **Choice A is correct.** **(7.G.1-7.G.5)** The purple triangle vertices have y -values 1, 1, 3, which become $-1, -1, -3$ in the orange triangle, indicating a reflection over the x -axis.
- 11) **Choice B is correct.** **(7.NS.1-7.NS.3)** The negative exponent -31 indicates a decimal far to the right, meaning an extremely tiny value.
- 12) **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.
- 13) **Choice A is correct.** **(7.EE.1-7.EE.2)** Combine like terms: $(-4t + 7t) + (12 - 5) = 3t + 7$.
- 14) **Choice A is correct.** **(7.EE.1-7.EE.2)** Division is subtraction of exponents: $c^8 \div c^5 = c^{8-5} = c^3$.
- 15) **Choice D is correct.** **(7.SP.5-7.SP.8)** Option D: $0.4 + 0.4 + 0.3 = 1.1 \neq 1$, so it is not valid. All other options sum to 1.
- 16) **Choice C is correct.** **(7.NS.2)** A: $(-6) \times 3 = -18 < 0$ (false). B: $(-4) \times (-4) = 16 > 0$ (false). C: Both equal -10 (true). D: $(-1) \times 7 = -7$ and $(-1) \times 6 = -6$; $-7 \not< -6$ (false).
- 17) **Choice B is correct.** **(7.EE.1-7.EE.2)** $x - 0.02x = (1 - 0.02)x = 0.98x$. A 2% discount leaves 98% of the original.
- 18) **Choice D is correct.** **(7.RP.3)** Total fees = $0.25 + 15.00 + 2.50 + 8.00 = \25.75 .
- 19) **Choice B is correct.** **(7.G.4-7.G.6)** Decompose into a rectangle and a triangle. Rectangle: $8 \times 5 = 40$ sq units. Triangle: $\frac{1}{2} \times 2 \times 5 = 5$ sq units. Add: $40 + 5 = 45$ sq units.
- 20) **Choice C is correct.** **(7.RP.1-7.RP.3)** Discount: $25\% \times 24 = 0.25 \times 24 = 6$. Sale price: $24 - 6 = 18$.
- 21) **Choice B is correct.** **(7.G.4-7.G.6)** Base area = $\frac{1}{2} \times 10 \times 6 = 30$ in². Depth = $\frac{V}{B} = \frac{360}{30} = 12$ in.
- 22) **The correct answer is A,C.** **(7.RP.3)** Automation (A) ensures consistent saving without temptation, and increasing income (C) provides more funds to allocate to goals. Options B and D actively reduce savings, and E overlooks the powerful effect of compound growth over time.
- 23) **Choice B is correct.** **(7.G.1-7.G.5)** When two sides and the angle between them are given, exactly one triangle can be constructed (up to congruence).
- 24) **Choice B is correct.** **(7.G.4-7.G.6)** The diameter is always 2 times the radius: $d = 2r$.
- 25) **Choice A is correct.** **(7.G.1-7.G.5)** This is the converse of the Pythagorean theorem. When the square of the longest side equals the sum of squares of the other two sides, the angle opposite the longest side is a right angle.
- 26) **Choice C is correct.** **(7.SP.1-7.SP.4)** $\frac{42}{150} = \frac{x}{500}$. Simplify: $\frac{7}{25} = \frac{x}{500} \Rightarrow x = 140$.
- 27) **Choice C is correct.** **(7.NS.1-7.NS.3)** Two points on a number line have absolute value 10: the point 10 (ten units right of zero) and -10 (ten units left of zero).
- 28) **Choice D is correct.** **(7.RP.1-7.RP.3)** Unit rate: $\frac{1/2}{2} = \frac{1}{4}$ cup per dozen. For 5 dozen: $\frac{1}{4} \times 5 = \frac{5}{4}$ cups.
- 29) **Choice D is correct.** **(7.RP.1-7.RP.3)** The line passes through (0, 0) and (5, 5), making it proportional with $k = 1$ or $y = x$.



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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!



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