

6 INDIANA I LEARN

GRADE

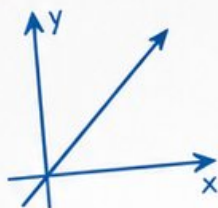
7

MATH

PRACTICE TESTS

Standards Aligned
Problem Solving For
Comprehensive
Assessment Programs

$$y = mx + b$$



$$2(x - 3) = 4x + 6$$



6 PRINTED
TESTS



2 ONLINE
TESTS



USE THESE TWO
ADDITIONAL ONLINE
PRACTICE TESTS
FOR EXTRA REVIEW AFTER
THE PRINTED TESTS
IN THIS BOOK.



Build
Confidence



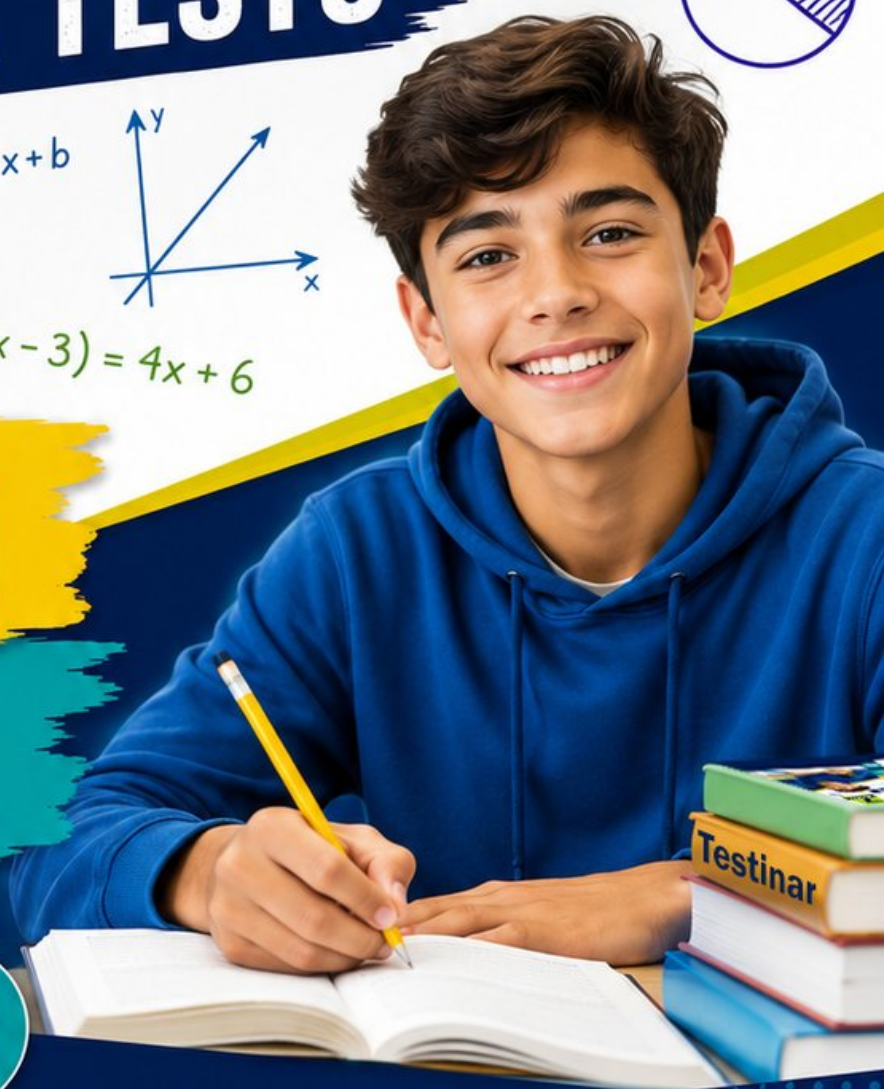
Strengthen
Math Skills



Detailed Answers
& Explanations



Improve Test
Performance



6 Indiana ILEARN Grade 7 Math Practice Tests

Standards-Aligned Practice with Review, Answer Keys, and Explanations



Six 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!

Six focused rounds for sharper ILEARN math thinking

This book gives you six 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

A six-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?

Six ILEARN tests, 240 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.
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) A tailor cuts 4 identical outfits using $\frac{8}{3}$ yards of fabric. How many yards of fabric per outfit?

☐ A. $\frac{1}{3}$ yard per outfit

☐ B. $\frac{3}{2}$ yards per outfit

☐ C. 2 yards per outfit

☐ D. $\frac{2}{3}$ yard per outfit

2) Solve for x : $2(x + 6) = 20$

☐ A. $x = 2$

☐ B. $x = 4$

☐ C. $x = 6$

☐ D. $x = 8$

3) If y is proportional to x , and a point is $(2, 6)$, what is the constant of proportionality?

☐ A. $k = \frac{1}{3}$

☐ B. $k = 2$

☐ C. $k = 6$

☐ D. $k = 3$

4) Which of the following is a *parameter*?

☐ A. The median age of 80 randomly selected shoppers at the mall

☐ B. The average height of all students in a school

☐ C. The percentage of 500 surveyed households that use streaming services

☐ D. The standard deviation of a sample of test scores

5) A spinner with 5 equal sections is used to simulate an event. After 100 spins, the results show that one section appears 12 times, another appears 18 times, another appears 22 times, another appears 26 times, and the last appears 22 times. Which section's result deviates most from its theoretical probability?

☐ A. The section appearing 12 times

☐ B. The section appearing 18 times

☐ C. The section appearing 22 times

☐ D. The section appearing 26 times



Die Outcomes

Red	Blue
-----	------

6)

A biased die has 2 red faces and 4 blue faces. What is the probability of rolling blue on a single roll?

- ☐ A. $\frac{2}{6}$
☐ B. $\frac{5}{6}$

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

7) The total surface area of a cylinder with radius r and height h can be expressed as:

- ☐ A. $\pi r^2 + 2\pi rh$
☐ B. $2\pi rh$ only

- ☐ C. $2\pi r(r + h)$
☐ D. $\pi r(2r + 2h)$

8) Two datasets both have a range of 30. Which measure would help distinguish their variability further?

- ☐ A. Mode
☐ B. Interquartile range or MAD

- ☐ C. Minimum value
☐ D. Outlier count

9) A circle graph shows the budget allocation for a school: Athletics 20%, Academics 50%, Support Services 20%, Other 10%. If the total budget is \$500,000, how much is allocated to Academics?

- ☐ A. \$50,000
☐ B. \$100,000

- ☐ C. \$200,000
☐ D. \$250,000



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- 10) Two dot plots show the number of push-ups completed in a fitness test by two grades. Grade 6: 12, 14, 15, 15, 16, 16, 16, 17, 18. Grade 7: 8, 10, 16, 18, 20, 22. As a coach building group improvement, which grade has the most room for collective advancement?

- ☐ A. Grade 6 (concentrated performance leaves room for collective improvement)
- ☐ B. Grade 7 (already achieving higher maximum of 22)
- ☐ C. Both grades have equal potential
- ☐ D. Grade 6 (higher median of 16)

- 11) A bag contains 6 white marbles and 4 black marbles. One marble is drawn at random. What is the probability it is white?

- ☐ A. $\frac{6}{10}$
- ☐ B. $\frac{3}{5}$
- ☐ C. $\frac{4}{10}$
- ☐ D. $\frac{2}{5}$

- 12) A spinner with 4 equal sections was spun 360 times. The results are displayed in a frequency table:

Section	Red	Blue	Green	Yellow
Frequency	95	88	92	85

How does the experimental probability of landing on red compare to the theoretical probability of $\frac{1}{4}$?

- ☐ A. Experimental is higher
- ☐ B. Experimental is lower
- ☐ C. Both are exactly equal
- ☐ D. Cannot compare without more data
- 13) Two similar triangles have areas in the ratio 4 : 9. If the smaller triangle has a base of 8 cm, what is the base of the larger triangle?



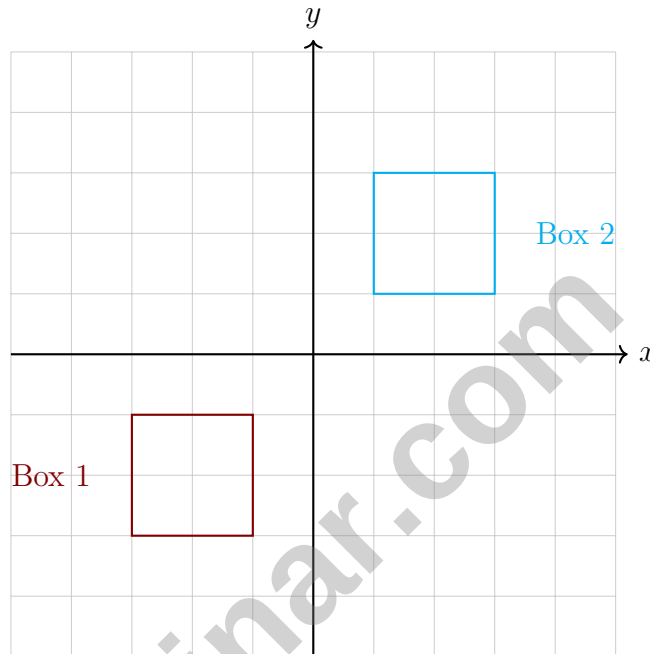
1) Solve: $-2x + 6 = 18$ and check that a negative answer is reasonable.

☐ A. $x = -6$

☐ C. $x = 4$

☐ B. $x = -4$

☐ D. $x = 6$



2)

Box 1 is transformed to Box 2. A student claims this is a reflection over the line $y = x$. Is the student correct? Why or why not?

☐ A. Yes; the coordinates are swapped

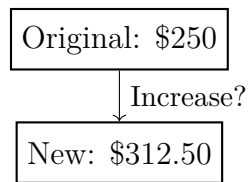
☐ C. Yes; dimensions are preserved

☐ B. No; this is a 180° rotation plus translation

☐ D. No; reflection over $y = x$ would map $(-3, -3)$ to $(-3, -3)$, not $(1, 1)$



3)



A diagram shows an original price of \$250 increased to \$312.50. What is the percent increase?

- ☐ A. 20% ☐ C. 30%
☐ B. 62.50% ☐ D. 25%

4) A simulation of drawing cards with replacement produces 60 trials. If outcome A appears 15 times and outcome B appears 45 times, what is the experimental error compared to the theoretical probability if outcome A has theoretical probability 0.20?

- ☐ A. 0.05 ☐ C. 0.15
☐ B. 0.10 ☐ D. 0.25

5) A two-way table shows outcomes for tossing a coin and rolling a die showing 1, 2, or 3. What is the total number of outcomes?

	1	2	3
H	H1	H2	H3
T	T1	T2	T3

- ☐ A. 2 outcomes ☐ C. 5 outcomes
☐ B. 3 outcomes ☐ D. 6 outcomes



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- 1) A rental car costs \$25 per day. Which table represents the cost for different numbers of days?

Days	1	2	3
Option A: Cost	25	50	75
Option B: Cost	26	50	74

- ☐ A. Option A
 ☐ C. Neither
☐ B. Option B
 ☐ D. Both
- 2) A circle has an area of 154 square centimeters. What is its radius? Use $\pi \approx \frac{22}{7}$.
- ☐ A. 7 centimeters
 ☐ C. 14 centimeters
☐ B. 11 centimeters
 ☐ D. 49 centimeters
- 3) A cylindrical container has a height of 7 cm. If the surface area is 376.8 cm^2 , what is the radius? Use $\pi \approx 3.14$.
- ☐ A. 2.5 cm
 ☐ C. 4 cm
☐ B. 3 cm
 ☐ D. 5 cm
- 4) A class splits into two study groups. Group X: median = 82, IQR = 8. Group Y: median = 82, IQR = 14. Which group has more consistent performance?
- ☐ A. Group X (smaller IQR)
 ☐ C. Both are equally consistent
☐ B. Group Y (larger IQR means more diversity)
 ☐ D. Cannot determine without range



- 5) A line graph shows the cost of a movie ticket over 10 years (2014–2024): \$8, \$8.50, \$9, \$9.50, \$10, \$10.25, \$10.50, \$11, \$11.50, \$12. Which year shows the smallest increase from the previous year?
- ☐ A. 2015 (increase of \$0.50) ☐ C. 2019 (increase of \$0.25)
☐ B. 2018 (increase of \$0.50) ☐ D. 2020 (increase of \$0.50)
- 6) A student rewrites $5(2x - 3)$ as $10x - 15$ and then as $10x - 3 - 5 + 3$. What error does the second step show?
- ☐ A. Distributing only the 5 to the $2x$ but not to the -3 ☐ C. Adding unnecessary terms that don't equal the original
☐ B. Forgetting to multiply both terms inside the parentheses ☐ D. Not combining like terms at the end
- 7) A stem-and-leaf plot shows the ages of workers at two companies. Company X has data: 22, 24, 25, 26, 29; Company Y has data: 18, 19, 22, 45, 48. Which statement is best supported?
- ☐ A. Company X has a higher median and less spread ☐ C. Both companies have the same age distribution
☐ B. Company Y has younger workers overall ☐ D. Company X workers are older than Company Y workers
- 8) A student claims: "Since I got a 6 on the first die roll, the next roll CANNOT be another 6 because that's too unlikely." This reasoning contains which error?
- ☐ A. Misunderstanding mutually exclusive events ☐ C. Believing past outcomes influence independent future events
☐ B. Confusing probability with certainty ☐ D. Incorrectly simplifying fractions



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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 D is correct.** (7.RP.1-7.RP.3) Unit rate: $\frac{8/3}{4} = \frac{8}{3} \times \frac{1}{4} = \frac{8}{12} = \frac{2}{3}$ yard per outfit.
- 2) **Choice B is correct.** (7.EE.4a) Distribute: $2x + 12 = 20$. Subtract 12: $2x = 8$. Divide by 2: $x = 4$. (Distractor A: dividing only the right side; Distractor C: forgetting to divide by 2; Distractor D: arithmetic error in final step.)
- 3) **Choice D is correct.** (7.RP.1-7.RP.3) From $y = kx$: $6 = k(2)$, so $k = \frac{6}{2} = 3$.
- 4) **Choice B is correct.** (7.SP.1-7.SP.4) A parameter describes a characteristic of an entire population. Average height of ALL students is a population parameter; the others are statistics from samples.
- 5) **Choice A is correct.** (7.SP.5-7.SP.8) Theoretical: $\frac{100}{5} = 20$ for each. Deviation: $|12 - 20| = 8$, $|18 - 20| = 2$, $|22 - 20| = 2$, $|26 - 20| = 6$. Largest deviation is 8.
- 6) **Choice C is correct.** (7.SP.5-7.SP.8) Blue faces: 4 out of 6. $P(\text{blue}) = \frac{4}{6} = \frac{2}{3}$.
- 7) **Choice C is correct.** (7.G.4-7.G.6) Total surface area includes two circular bases ($2\pi r^2$) and lateral area ($2\pi rh$), which factors to $2\pi r(r + h)$.
- 8) **Choice B is correct.** (7.SP.1-7.SP.4) Range only tells the difference between max and min. IQR and MAD show how data is distributed within that range, distinguishing clustered from spread-out data with the same range.
- 9) **Choice D is correct.** (7.SP.1-7.SP.4) 50% of \$500,000 = $0.50 \times 500,000 = 250,000$ allocated to Academics.
- 10) **Choice A is correct.** (7.SP.3) Grade 6 clusters at 14–17 push-ups, showing all students perform at similar levels with room to improve together. Grade 7 spreads from 8–22, with some students already excelling (22) while others lag (8). A uniform group (Grade 6) has more opportunity for collective advancement.
- 11) **Choice B is correct.** (7.SP.5-7.SP.8) Total marbles: 10. White marbles: 6. Probability: $\frac{6}{10} = \frac{3}{5}$.
- 12) **Choice A is correct.** (7.SP.6) Experimental probability of red (relative frequency): $\frac{95}{360} \approx 0.264$. Theoretical (equal sections): $\frac{1}{4} = 0.25$. Random variation caused experimental to exceed theoretical.
- 13) **The correct answer is 12.** (7.G.1-7.G.5) Area ratio 4 : 9 gives linear scale factor $\sqrt{4} : \sqrt{9} = 2 : 3$. Larger base = $8 \times \frac{3}{2} = 12$ cm.
- 14) **Choice C is correct.** (7.SP.5-7.SP.8) The point is at the third tick mark from 0 to 1, which represents 0.3.
- 15) **Choice B is correct.** (7.SP.1-7.SP.4) $\frac{5}{50} = \frac{x}{10000}$. Reduce: $\frac{1}{10} = \frac{x}{10000} \Rightarrow x = 1000$.
- 16) **The correct answer is 125.6.** (7.G.4-7.G.6) Circumference = $2\pi r = 2 \times 3.14 \times 5 = 31.4$ m. Distance = $4 \times 31.4 = 125.6$ m.
- 17) **Choice A is correct.** (7.RP.3) Percent error = $\frac{|18-24|}{24} \times 100\% = \frac{6}{24} \times 100\% = 25\%$.
- 18) **Choice A is correct.** (7.EE.1-7.EE.2) Expand: $6x + 12 + 2x - 6 = 8x + 6$. Combine like terms.
- 19) **Choice D is correct.** (7.RP.1-7.RP.3) Multiply map distance by scale: $4.5 \times 25 = 112.5$ miles.
- 20) **The correct answer is A,B.** (7.G.1-7.G.5) Correct answers: (A) $(1, 0) \rightarrow (1 + 2, 0 + 3) = (3, 3) \rightarrow (-3, 3)$. (B) $(0, 0) \rightarrow (2, 3) \rightarrow (-2, 3)$. Both steps verified. Distractors: (C) True but not a unique property of this transformation (all rigid transformations preserve congruence). (D) False—rigid transformations do not change size.
- 21) **Choice D is correct.** (7.RP.3) After discount: $1200 - 0.15(1200) = \$1020$. Tax: $0.08(1020) = \$81.60$. Final: $1020 + 81.60 = \$1102.40$.
- 22) **The correct answer is 1386.** (7.G.4-7.G.6) $A = \frac{22}{7} \times 21^2 = \frac{22}{7} \times 441 = 22 \times 63 = 1386$ cm².
- 23) **Choice D is correct.** (7.NS.1-7.NS.3) $-7 - (-7) = -7 + 7 = 0$. Any number minus itself equals 0.
- 24) **The correct answer is 176.** (7.G.4-7.G.6) Base: $8^2 = 64$ cm². Four triangles: $4 \times \frac{1}{2}(8)(7) = 4 \times 28 = 112$ cm². Total: $64 + 112 = 176$ cm².
- 25) **Choice C is correct.** (7.SP.1-7.SP.4) 36% of 2500 = $0.36 \times 2500 = 900$ customers.
- 26) **Choice D is correct.** (7.RP.3) The discount is 40% of \$80: $0.40 \times 80 = 32$ dollars.
- 27) **Choice A is correct.** (7.NS.1b) Add absolute values: $|-15| + |-8| = 15 + 8 = 23$. Both are negative, so the sum is -23.
- 28) **Choice C is correct.** (7.EE.1) A simplified expression has all like terms combined. Option C has no like terms remaining.



Hi, Persistent Problem Solver!

◇ Some Grade 7 questions ask you to hold several ideas in your mind at once. That can feel hard, and that is exactly why practice matters. ◇

★ **Remember this:** You showed persistence by continuing through the set. That habit is powerful because difficult problems often open after one more good attempt. You practiced across 6 full Grade 7 practice tests, and that repeated effort matters. ★

Persistence Tools

- **Try a Smaller Case:** Use an easier number to see the pattern.
- **Draw It:** Make the situation visible.
- **Restate It:** Say the question in your own words.
- **Check One Step:** Fix the first unclear place.

Grade 7 test-day tip: When stuck, do not restart everything. Find the first step you trust, then rebuild from there.

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

Jay Daie

Your Persistence Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **6** 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:

6 Full-Length Printed Tests

2 Online Practice Tests

 Detailed Answers & 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



Build Confidence

Practice regularly to feel prepared and test-ready.



Strengthen Math Skills

Develop key math concepts and problem solving abilities.



Improve Understanding

Learn with clear explanations and step-by-step solutions.



Test Confidence

Familiarize with test formats and improve accuracy and speed.



Boost Performance

Apply your knowledge and achieve your best score!

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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