

10

Indiana I LEARN

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



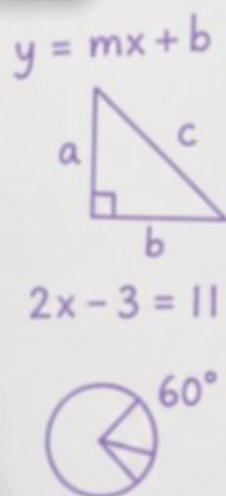
DETAILED ANSWER EXPLANATIONS

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 Indiana ILEARN Grade 7 Math Practice Tests

Indiana Grade 7 ILEARN Practice for well-paced review of rates, rational numbers, equations, inequalities, geometry, and probability



Ten 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!

Ten focused rounds for sharper Indiana ILEARN math thinking

This book gives you ten 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 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.

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?

Ten Indiana ILEARN 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 Indiana 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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& answers

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1) 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

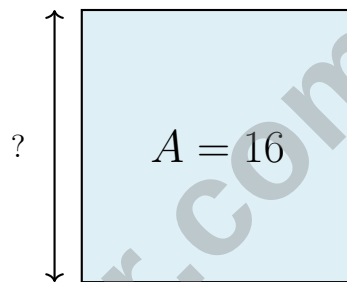
2) A person buys an item for \$45 and sells it for 20% more. What is the selling price?

☐ A. \$36

☐ C. \$65

☐ B. \$54

☐ D. \$90



3)

What is the side length of the square?

☐ A. 2

☐ C. 4

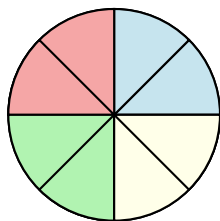
☐ B. 3

☐ D. 5

4) What does MAD (Mean Absolute Deviation) measure?

☐ A. The average distance of data points from the mean☐ C. The most frequently occurring value☐ B. The middle value in an ordered dataset☐ D. The difference between max and min

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5)

A spinner has 8 equal sections: 2 blue, 2 red, 2 green, 2 yellow. What is the probability of NOT landing on blue or red?

- ☐ A. $\frac{4}{8}$
☐ B. $\frac{3}{8}$

- ☐ C. $\frac{2}{8}$
☐ D. $\frac{6}{8}$

6) A student chooses a shirt from 5 options and pants from 3 options. How many different outfits are possible?

- ☐ A. 8
☐ B. 15

- ☐ C. 20
☐ D. 25

7) A circle has radius 7 cm. Find its circumference using $\pi \approx \frac{22}{7}$.

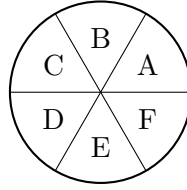
8) A bag contains 4 red, 3 blue, and 2 green marbles. If one marble is drawn at random, what is the probability it is NOT blue?

- ☐ A. $\frac{3}{9}$
☐ B. $\frac{6}{9}$

- ☐ C. $\frac{4}{9}$
☐ D. $\frac{2}{9}$



- 9) A spinner divided into 6 equal sections was spun 180 times. A tally chart shows section C was selected 36 times. What fraction of the spins resulted in section C?



- ☐ A. $\frac{1}{6}$ ☐ C. $\frac{36}{180}$
☐ B. $\frac{1}{4}$ ☐ D. 0.15
- 10) The stem-and-leaf plot below shows test scores.

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

What is the maximum score?

- ☐ A. 76 ☐ C. 79
☐ B. 77 ☐ D. 86
- 11) Which probability best matches the phrase “even chance”?
- ☐ A. 0.2 ☐ C. 0.8
☐ B. 0.5 ☐ D. 0.9



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- 1) A company had 250 employees. They hired 20% more. How many new employees were hired?
- ☐ A. 40 ☐ C. 60
☐ B. 70 ☐ D. 50
- 2) A dataset has minimum 28 and maximum 94. If you create a stem-and-leaf plot with single-digit stems, how many stems are required?
- ☐ A. 6 ☐ C. 8
☐ B. 7 ☐ D. 9
- 3) A patio is composed of two identical trapezoids joined together. Each trapezoid has parallel sides of 4 m and 6 m with height 3 m. What is the total area?
- ☐ A. 15 m² ☐ C. 45 m²
☐ B. 30 m² ☐ D. 60 m²
- 4) A rectangular prism has length 12 cm, width 5 cm, and height 3 cm. Which expression correctly represents the volume?
- ☐ A. $(12 + 5) \times 3$ ☐ C. $2(12 + 5 + 3)$
☐ B. $12 \times 5 \times 3$ ☐ D. $12 + 5 + 3$
- 5) Simplify: $10p - 5p + 3p - 2p$
- ☐ A. $6p$ ☐ C. $16p$
☐ B. $20p$ ☐ D. $4p$



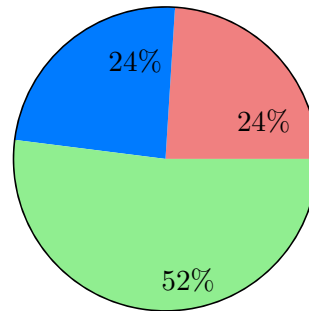
6) Factor: $25cd - 35c$

☐ A. $5c(5d - 7)$

☐ C. $c(25d - 35)$

☐ B. $5(5cd - 7c)$

☐ D. $35(25cd - c)$



7)

The circle graph shows garden plot usage on a community farm. Coral is vegetables (24%), sky blue is flowers (24%), and green is herbs (52%). If there are 250 total plot assignments, how many are herb plots?

☐ A. 60

☐ C. 130

☐ B. 110

☐ D. 200

8) A student evaluates $2x + 3y$ when $x = -4$ and $y = 2$, and writes: " $2(-4) + 3(2) = -8 + 6 = -2$." Is this correct?

☐ A. No, the error is in the multiplication of $2x$
☐ C. No, negative times positive is positive

☐ B. No, the error is in the addition step

☐ D. Yes, the answer is -2

9) A runner can run at most 15 miles in 2 hours. What is the maximum speed (in mph)?

☐ A. $2s \leq 15$

☐ C. $s \geq 15$

☐ B. $s \leq 7.5$

☐ D. $2s > 15$



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1) A cube has edge length 5 mm. What is its surface area?

☐ A. 25 mm^2

☐ B. 50 mm^2

☐ C. 125 mm^2

☐ D. 150 mm^2

2) Simplify: $(5a + 9) - (2a - 3)$

☐ A. $3a + 12$

☐ B. $3a + 6$

☐ C. $7a + 6$

☐ D. $3a - 6$

3) Simplify $14s^7 \div 7s^3$:

☐ A. $2s^4$

☐ B. $2s^{10}$

☐ C. $2s^{21}$

☐ D. $7s^4$

4) A circle has an area of 314 m^2 . What is its radius? (Use $\pi \approx 3.14$.)

5) If a sector in a circle graph measures 144° , what percent of the circle does it represent?



- 6) 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 .
- ☐ B. The coefficient 3 should be the constant term.
- ☐ C. The variable b should be a different letter.
- ☐ D. There is no error; the equation is correct.
- 7) Solve: $9x - 5 = 49$
- ☐ A. $x = 4$
- ☐ B. $x = 5$
- ☐ C. $x = 6$
- ☐ D. $x = 7$
- 8) Which equation is equivalent to $3(x - 5) = 24$?
- ☐ A. $3x - 15 = 24$
- ☐ B. $3x - 5 = 24$
- ☐ C. $x - 15 = 24$
- ☐ D. $3x = 19$
- 9) Solve: $\frac{1}{3}x - 2 = 4$
- ☐ A. $x = 6$
- ☐ B. $x = 12$
- ☐ C. $x = 18$
- ☐ D. $x = 24$
- 10) A blueprint uses a scale of $\frac{1}{8}$ inch : 1 foot. If a wall in the blueprint is 2 inches long, what is the actual length of the wall?
- ☐ A. 8 feet
- ☐ B. 12 feet
- ☐ C. 16 feet
- ☐ D. 20 feet



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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 B is correct.** (7.G.4-7.G.6) Start with the square: $14 \times 14 = 196 \text{ cm}^2$. Subtract the four corner triangles: $4 \times \left(\frac{1}{2} \times 3 \times 3\right) = 18 \text{ cm}^2$. Remaining: $196 - 18 = 178 \text{ cm}^2$.
- 2) **Choice B is correct.** (7.EE.3-7.EE.4) Selling price = $45 \times 1.20 = 54$.
- 3) **Choice C is correct.** (7.NS.1-7.NS.3) If the area is 16, then $s^2 = 16$, so $s = \sqrt{16} = 4$.
- 4) **Choice A is correct.** (7.SP.1-7.SP.4) MAD is the average of the absolute deviations from the mean, measuring typical spread around the center. It is not a measure of center (B, C) or range (D).
- 5) **Choice A is correct.** (7.SP.5-7.SP.8) Blue or red: $\frac{4}{8}$. Not blue or red: $1 - \frac{4}{8} = \frac{4}{8} = \frac{1}{2}$.
- 6) **Choice B is correct.** (7.SP.5-7.SP.8) By the counting principle: 5 shirts $\times$ 3 pants = 15 different outfits.
- 7) **The correct answer is 44.** (7.G.4-7.G.6) $C = 2\pi r = 2 \times \frac{22}{7} \times 7 = 2 \times 22 = 44 \text{ cm}$.
- 8) **Choice B is correct.** (7.SP.5-7.SP.8) Total marbles: 9. Blue marbles: 3. Not blue: $9 - 3 = 6$. Probability: $\frac{6}{9} = \frac{2}{3}$.
- 9) **Choice C is correct.** (7.SP.6) Experimental probability = $\frac{36}{180}$, which simplifies to $\frac{1}{5} = 0.20$. Note that this differs from the theoretical probability of $\frac{1}{6} \approx 0.167$ for an equally likely spinner.
- 10) **Choice A is correct.** (7.SP.1-7.SP.4) The largest stem is 7 with the largest leaf 6, giving 76.
- 11) **Choice B is correct.** (7.SP.5-7.SP.8) An even chance means equally likely to happen or not, which is $P = 0.5 = 50\%$.
- 12) **Choice D is correct.** (7.RP.3) Percent error = $\frac{|45-50|}{50} \times 100\% = \frac{5}{50} \times 100\% = 10\%$.
- 13) **The correct answer is 20.** (7.G.4-7.G.6) $V = \pi r^2 h \Rightarrow 565.2 = 3.14 \times 9 \times h \Rightarrow 565.2 = 28.26h \Rightarrow h = 20 \text{ feet}$.
- 14) **Choice A is correct.** (7.EE.1-7.EE.2) Distribute -4 : $-4(3b) - 4(2) = -12b - 8$.
- 15) **Choice D is correct.** (7.RP.1-7.RP.3) Convert 25 feet to inches: $25 \times 12 = 300 \text{ inches}$. Scale = $5 : 300 = 1 : 60$.
- 16) **Choice D is correct.** (7.RP.3) Discount percent = $\frac{3}{15} \times 100 = 20\%$.
- 17) **Choice D is correct.** (7.RP.3) $I = 12000 \times 0.095 \times 4 = \4560 . $A = 12000 + 4560 = \$16560$.
- 18) **Choice A is correct.** (7.NS.1b) Both numbers are negative. Add absolute values: $|-47| + |-26| = 47 + 26 = 73$. Keep the negative sign: $-47 + (-26) = -73$.
- 19) **Choice A is correct.** (7.EE.1) Combine: $(8 - 3 + 1)x + (5 - 2)y = 6x + 3y$.
- 20) **Choice A is correct.** (7.EE.1-7.EE.2) The GCF of 10 and 15 is 5. Check: $5(2x) + 5(3) = 10x + 15$. Correct.
- 21) **Choice D is correct.** (7.SP.1-7.SP.4) 42% of 600 = $0.42 \times 600 = 252 \text{ students}$.
- 22) **The correct answer is A, D.** (7.G.1-7.G.5) A is correct: $(3)^2 = 9$. D is correct: $(2.5)^2 = 6.25$. B is wrong: $(\frac{1}{2})^2 = \frac{1}{4}$. C is wrong: $\sqrt{16} = 4$, so the linear factor is 4, not the other way.
- 23) **Choice C is correct.** (7.RP.3) 75% of 20 is $0.75 \times 20 = 15 \text{ games}$.
- 24) **Choice B is correct.** (7.EE.1-7.EE.2) Substitute: $7 - 3(-2) = 7 + 6 = 13$.
- 25) **The correct answer is 120.** (7.SP.1-7.SP.4) The sample size is the number of individuals surveyed. In this case, 120 adults were randomly selected and surveyed, so the sample size is 120.
- 26) **Choice C is correct.** (7.EE.4b) $x \leq 2$ includes 2 (filled circle) and all values less than 2 (arrow left).
- 27) **Choice D is correct.** (7.RP.1-7.RP.3) The unit-rate point (1, 0.85) shows the rate is 0.85 miles per gallon.
- 28) **Choice A is correct.** (7.NS.1-7.NS.3) The arrow shows the distance between 7 and 3 is 4 units. This represents the subtraction $7 - 3 = 4$.
- 29) **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 $\frac{6}{35}$.
- 30) **Choice A is correct.** (7.NS.2d) $0.\overline{36} = 0.363636\ldots = \frac{36}{99} = \frac{4}{11}$ (divide by GCD 9). B is false (that's 0.36, terminating). C is false (it repeats). D is false (11 is the denominator).
- 31) **Choice B is correct.** (7.NS.1-7.NS.3) Debt: $-150 \div 5 = -30 \text{ dollars per person}$.
- 32) **Choice A is correct.** (7.NS.1-7.NS.3) Average = $\frac{450+520+485}{3} = \frac{1455}{3} = 485 \text{ calories}$.



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!

Don't lose it—your extra practice and success start here!



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