

7 Indiana ILEARN

Grade 7 Math Practice Tests



7 PRINTED TESTS + 2 ONLINE TESTS

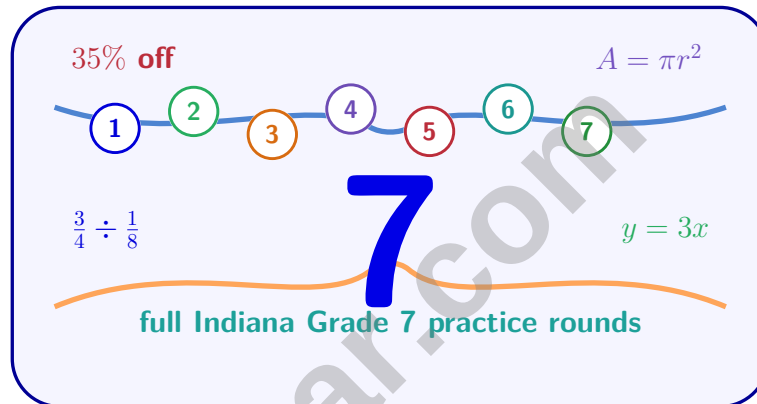


Standards Aligned Problem Solving
For Comprehensive Assessment Programs



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 seven 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, 280 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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1) A number line arrow starts at -6 and ends at 9 . What integer was added?

☐ A. -15
☐ C. 3
☐ B. -3
☐ D. 15

2) What is $0 \times (-9)$?

☐ A. -9
☐ C. 9
☐ B. 0
☐ D. -1

3) A travel agent books a vacation package costing $\$2,000$ and earns a 5% commission. The client also adds travel insurance for $\$150$. What is the agent's commission on just the package?

☐ A. $\$160$
☐ C. $\$150$
☐ B. $\$110$
☐ D. $\$100$

4) Which of the following is the correct criterion for constructing a right triangle when the hypotenuse and one leg are given?

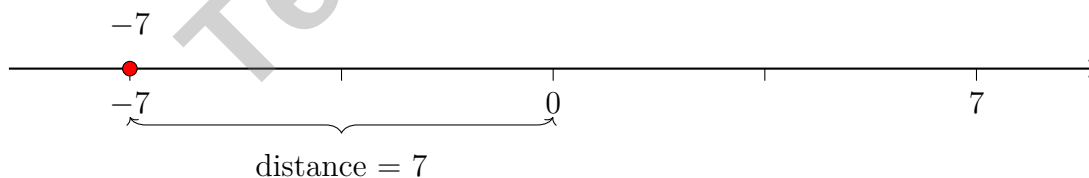
☐ A. SSS

☐ C. SAS

☐ B. RHS (Right angle–Hypotenuse–Side)

☐ D. ASA

5) What is $|-7|$?


☐ A. -7 (confuses absolute value with the original number)

☐ C. 0 (misplaces absolute value at the origin)

☐ B. -14 (incorrectly applies a sign reversal)

☐ D. 7 (correct; distance is always non-negative)


6) Simplify: $5x + 3y - 2x + 4y$

☐ A. $3x + 7y$

☐ B. $7x + 7y$

☐ C. $3x - y$

☐ D. $10xy$

7) Factor: $-6x - 9$

☐ A. $-3(2x + 3)$

☐ B. $3(-2x - 3)$

☐ C. $-3(2x - 3)$

☐ D. $6(-x - 1.5)$

8) A rectangular prism has length 16 in, width 8 in, and height 2 in. What is the surface area?

☐ A. 120 in^2

☐ B. 240 in^2

☐ C. 352 in^2

☐ D. 412 in^2

9) A sports equipment company surveys 500 customers about their new racket design. The company wants to ensure the sample represents both amateur and professional players. Which sampling method best achieves this?

☐ A. Random selection of all customers

☐ B. Stratified sampling with separate groups for amateurs and professionals

☐ C. Selecting every 10th customer from an online list

☐ D. Asking volunteers at a professional tennis tournament

10) A spinner has 6 equal sections. To simulate rolling a standard die once, how many trials are needed if we spin once per trial?

☐ A. 1 trial

☐ B. 2 trials

☐ C. 6 trials

☐ D. 36 trials



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11) What is $0.8 - 1.2$?

☐ A. -0.4

☐ B. 0.4

☐ C. 2.0

☐ D. -2.0

12) Which expression *does not* equal -4 ?

☐ A. $(-16) \div 4$

☐ B. $(-20) \div 5$

☐ C. $12 \div (-3)$

☐ D. $(-8) \div (-2)$

13) Which fraction converts to a terminating decimal?

☐ A. $\frac{1}{3}$

☐ B. $\frac{2}{5}$

☐ C. $\frac{1}{6}$

☐ D. $\frac{1}{7}$

14) A contractor charges \$12.50 per hour. For a job that takes 7.5 hours, what is the total cost?

☐ A. \$25.00

☐ B. \$87.50

☐ C. \$93.75

☐ D. \$96.25

15) A phone company's annual revenue comes from \$100 in fixed service charges and \$50 per month. Which equation represents total annual revenue R in dollars?

☐ A. $R = 50(12) + 100$

☐ B. $R = 100 + 50(12)$

☐ C. $R = 50m + 100$ where $m = 12$ months

☐ D. $R = 100(12) + 50$

16) A taxi charges \$2.50 per mile plus a \$3 base fee. If a ride costs \$13, how many miles was the ride?

☐ A. 2 miles

☐ B. 4 miles

☐ C. 6 miles

☐ D. 8 miles



- 1) A spinner with 4 equal sections (Red, Blue, Green, Yellow) is spun twice to simulate a compound event. If “success” is defined as “the first spin is Red and the second spin is Blue,” how many outcomes in the sample space represent a success?

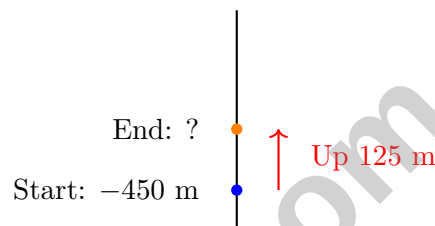
☐ A. 1

☐ C. 4

☐ B. 2

☐ D. 8

- 2) A submarine is at a depth of -450 meters. It ascends (moves up) 125 meters. What is its new depth?



- 3) A box plot compares video game scores (in points) for two players. Player A: Median = 1500, $Q1 = 1200$, $Q3 = 1800$. Player B: Median = 1400, $Q1 = 1100$, $Q3 = 2000$. Which player has more consistent performance?

☐ A. Player A (smaller IQR: 600 vs. 900)

☐ C. Both players have identical consistency

☐ B. Player B (higher third quartile)

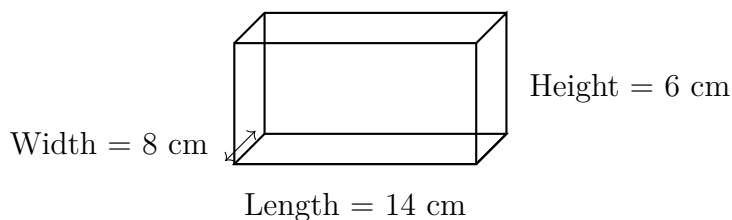
☐ D. Player B (higher maximum score)


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- 4) A composite figure consists of three rectangles stacked horizontally: $5\text{ m} \times 3\text{ m}$, $5\text{ m} \times 3\text{ m}$, and $5\text{ m} \times 3\text{ m}$. What is the total area?

☐ A. 15 m^2
☐ B. 30 m^2

☐ C. 35 m^2
☐ D. 45 m^2



5)

A rectangular prism has the dimensions shown. What is its volume?

☐ A. 28 cm^3
☐ B. 224 cm^3

☐ C. 504 cm^3
☐ D. 672 cm^3

- 6) A triangle has sides of 3.2 cm and 5.1 cm. Which range gives all possible values for the third side?

☐ A. $1.9 < c < 8.3\text{ cm}$
☐ B. $1.9 \leq c \leq 8.3\text{ cm}$

☐ C. $3.2 < c < 5.1\text{ cm}$
☐ D. $0 < c < 8.3\text{ cm}$

- 7) A student is asked: "If a circle has a diameter of 10 cm, what is the radius?" The student writes: "The radius is 20 cm." What is the student's error?

☐ A. The student multiplied by 2 instead of dividing by 2
☐ B. The student forgot that radius exists

☐ C. The student used the wrong units
☐ D. The student added instead of dividing



- 1) A penny, nickel, and dime were tossed together 200 times. The number of times exactly 2 coins landed on heads was 53. What is the experimental probability of getting exactly 2 heads when tossing the three coins?

☐ A. $\frac{2}{3}$
☐ B. $\frac{53}{200}$

☐ C. 0.27
☐ D. 0.375

55%



2)

Total

If the whole bar represents 200, how much does the shaded part represent?

☐ A. 55
☐ B. 90

☐ C. 110
☐ D. 145

3)

Item	Price per Unit	Quantity Purchased
Apples	\$0.75	8
Bread	\$2.50	3
Milk	\$3.99	2
Eggs	\$4.20	1

What is the total cost of the grocery purchase?

☐ A. \$26.58
☐ B. \$28.37

☐ C. \$25.68
☐ D. \$32.45



4) A student's math score on a pretest was 65 points. On the posttest after tutoring, the score was 78 points. What is the percent increase?

- ☐ A. 13% ☐ C. 20%
☐ B. 16.7% ☐ D. 83.3%

5) A coin is flipped 100 times. Heads appears 48 times. Based on this simulation, which is the estimated probability of flipping heads?

- ☐ A. 0.40 ☐ C. 0.50
☐ B. 0.48 ☐ D. 0.52

6) Solve the inequality $x - 3 < 4$ and identify which number line is correct.



7) A triangular prism has a right triangular base with legs 6 in and 8 in (hypotenuse 10 in). The prism is 12 in long. What is the surface area?

- ☐ A. 216 in^2 ☐ C. 336 in^2
☐ B. 288 in^2 ☐ D. 420 in^2

8) A hotel posts a survey in guest rooms asking: "Didn't you love your stay with us?" Which is the PRIMARY bias in the survey question itself?

- ☐ A. The question uses leading language suggesting a desired answer ☐ C. The survey is only given to guests
☐ B. The sample size is too small ☐ D. The question is too vague



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Indiana Learning Evaluation Assessment Readiness Network 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 Learning Evaluation Assessment Readiness Network practice test.



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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice D is correct.** (7.NS.1b) If -6 plus an unknown value equals 9 , then the unknown is 15 because $-6 + 15 = 9$. The distance from -6 to 9 is 15 units.
- 2) **Choice B is correct.** (7.NS.2) Any number multiplied by zero equals zero.
- 3) **Choice D is correct.** (7.RP.3) Commission on package = commission rate $\times$ package cost = $0.05 \times 2000 = \$100$. Insurance does not affect the commission calculation on the base package.
- 4) **Choice B is correct.** (7.G.1-7.G.5) When constructing a right triangle with a known right angle, hypotenuse, and one leg, the RHS condition guarantees a unique triangle. This is a special case applicable only to right triangles.
- 5) **Choice D is correct.** (7.NS.1-7.NS.3) The absolute value of any number is its distance from zero, which is always non-negative. $|-7| = 7$.
- 6) **Choice A is correct.** (7.EE.1) Group like terms by variable: $(5x - 2x) + (3y + 4y) = (5 - 2)x + (3 + 4)y = 3x + 7y$.
- 7) **Choice A is correct.** (7.EE.1-7.EE.2) GCF is 3 . Factor out the negative: $-6x - 9 = -3(2x + 3)$. Check: $-3(2x + 3) = -6x - 9$.
- 8) **Choice C is correct.** (7.G.4-7.G.6) $SA = 2(16 \cdot 8 + 16 \cdot 2 + 8 \cdot 2) = 2(128 + 32 + 16) = 2(176) = 352 \text{ in}^2$.
- 9) **Choice B is correct.** (7.SP.1-7.SP.4) Stratified sampling ensures both groups are represented in the sample, maintaining proportion and representativeness.
- 10) **Choice A is correct.** (7.SP.5-7.SP.8) A spinner with 6 equal sections directly models one roll of a die (one outcome per spin).
- 11) **Choice A is correct.** (7.NS.1-7.NS.3) $0.8 - 1.2 = -0.4$.
- 12) **Choice D is correct.** (7.NS.1-7.NS.3) (D) equals 4 , not -4 . The others: (A) -4 ✓, (B) -4 ✓, (C) -4 ✓.
- 13) **Choice B is correct.** (7.NS.2d) A fraction terminates if the denominator has only factors of 2 and/or 5 . Dividing: $2 \div 5 = 0.4$. The others contain factors like 3 or 7 .
- 14) **Choice C is correct.** (7.NS.1-7.NS.3) Total cost: $12.50 \times 7.5 = 93.75$ dollars.
- 15) **Choice B is correct.** (7.EE.4a) Fixed charges ($\$100$) plus monthly revenue ($\50×12 months) gives total. Both A and B are equivalent; B shows the form $q + px$ most clearly.
- 16) **Choice B is correct.** (7.EE.3-7.EE.4) Set up: $2.50m + 3 = 13 \Rightarrow 2.50m = 10 \Rightarrow m = 4$.
- 17) **Choice C is correct.** (7.EE.3-7.EE.4) Add 3 to both sides: $\frac{1}{2}x = 8$. Multiply by 2 : $x = 16$. Check: $\frac{1}{2}(16) - 3 = 8 - 3 = 5$ ✓. Reasonableness: Half of 16 is 8 ; minus 3 gives 5 . ✓
- 18) **Choice D is correct.** (7.EE.4b) Set up: $25d \leq 200$ (total cost at most $\$200$). Divide by 25 : $d \leq 8$ days maximum.
- 19) **Choice A is correct.** (7.SP.5-7.SP.8) Total socks = $6 + 4 = 10$. $P(\text{white}) = \frac{6}{10} = \frac{3}{5}$.
- 20) **Choice C is correct.** (7.SP.5-7.SP.8) Colors: 2 ; sizes: 3 . By the counting principle: $2 \times 3 = 6$ combinations.
- 21) **The correct answer is A,B.** (7.RP.3) Choice A: 20% of $500 = 0.20 \times 500 = 100$. ✓ Choice B: 50% of $500 = 0.50 \times 500 = 250$. ✓ Choice C: 10% of $500 = 50$, not 40 . ✗ Choice D: 15% of $500 = 75$, not 80 . ✗
- 22) **Choice B is correct.** (7.NS.1-7.NS.3) Perimeter = $4s = 24$, so $s = 6$ meters. Area = $s^2 = 6^2 = 36 \text{ m}^2$.
- 23) **Choice C is correct.** (7.NS.1-7.NS.3) $7.9 \times 10^9 = 7.9 \times 1,000,000,000 = 7,900,000,000$ (7.9 billion).
- 24) **Choice A is correct.** (7.EE.1-7.EE.2) Add both walls: $(10x + 8) + (6x - 3) = (10x + 6x) + (8 - 3) = 16x + 5$ feet.
- 25) **Choice B is correct.** (7.EE.1-7.EE.2) First apply power rule: $(h^2)^3 = h^{2 \times 3} = h^6$. Then apply product rule: $h^6 \cdot h^4 = h^{6+4} = h^{10}$.
- 26) **The correct answer is 1.5.** (7.RP.1-7.RP.3) The unit rate is $6 \div 4 = 1.5$.
- 27) **Choice C is correct.** (7.G.1-7.G.5) Actual dimensions: $16 \text{ m} \times 12 \text{ m}$. Diagonal: $\sqrt{16^2 + 12^2} = \sqrt{256 + 144} = \sqrt{400} = 20 \text{ m}$.
- 28) **The correct answer is \$960.** (7.RP.3) Discount: $\frac{20}{100} \times 1200 = 240$. New price: $1200 - 240 = \$960$.
- 29) **Choice C is correct.** (7.G.1-7.G.5) Width on drawing is 18 in , scale factor 8 yd per in : $18 \times 8 = 144 \text{ yd}$.
- 30) **Choice A is correct.** (7.G.1-7.G.5) A horizontal plane cutting through a frustum produces a circular cross-section. The radius of this circle is between the radii of the upper and lower bases.
- 31) **Choice C is correct.** (7.G.1-7.G.5) Linear pairs are supplementary: $48 + m = 180^\circ$, so $m = 132^\circ$.



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 7 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 **7** full-length Math practice tests and **2** online tests to help Grade 7 students build confidence, strengthen skills, and excel on standardized assessments.

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- ✓ Data Analysis
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- ✓ Algebraic Thinking
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2 ONLINE TESTS

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