

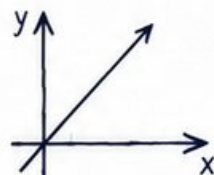
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Illinois
IARGRADE
7
MATH

PRACTICE TESTS

Standards Aligned
Problem Solving
For Comprehensive
Assessment Programs

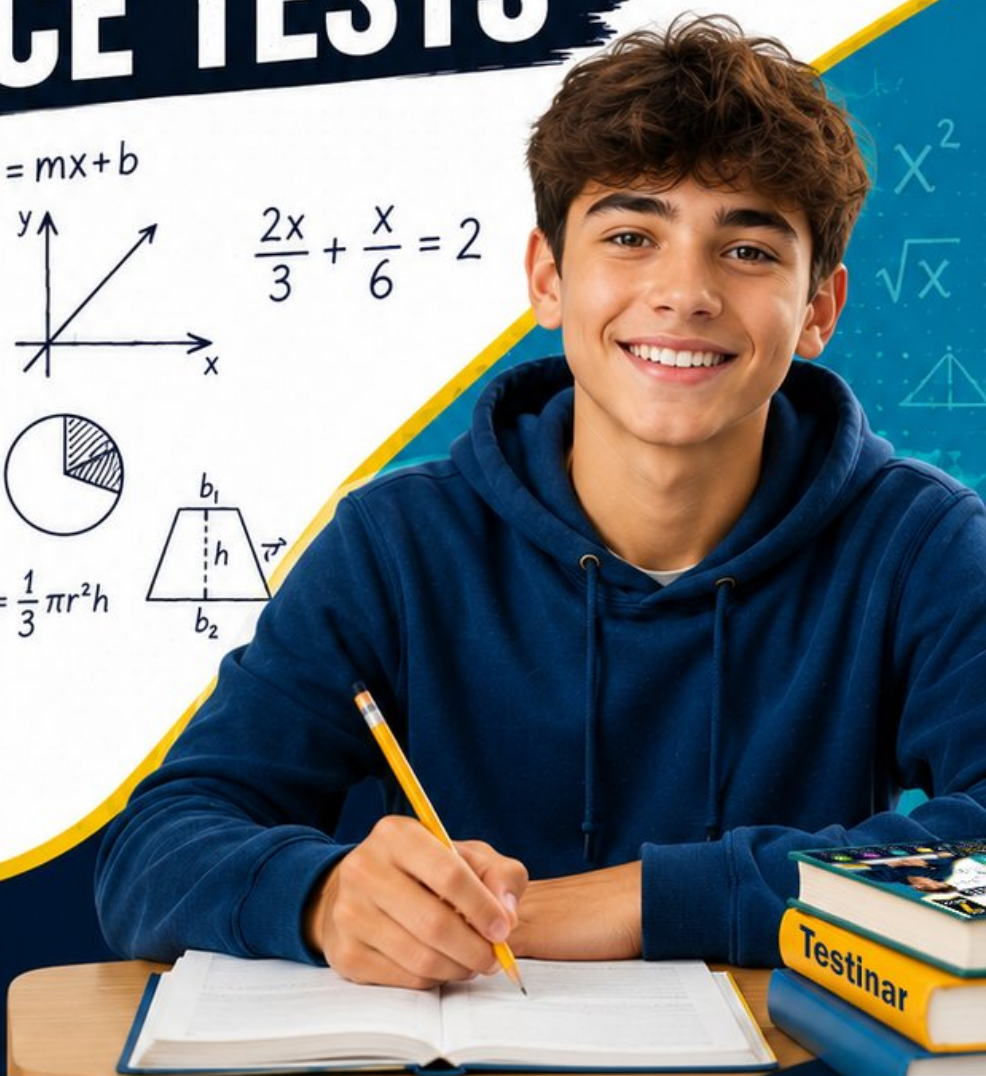
$$y = mx + b$$



$$\frac{2x}{3} + \frac{x}{6} = 2$$



$$V = \frac{1}{3} \pi r^2 h$$

4 PRINTED
TESTS2 ONLINE
TESTSUSE THESE TWO
ADDITIONAL ONLINE
PRACTICE TESTSFOR EXTRA REVIEW AFTER
THE PRINTED TESTS
IN THIS BOOK.Build
ConfidenceStrengthen
Math SkillsDetailed Answers
& ExplanationsImprove Test
Performance

4 Illinois IAR Grade 7 Math Practice Tests

Grade 7 IAR Practice with Review Pages and Answer Support



Four complete 40-question Grade 7 IAR 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, Illinois Grade 7 Problem Solver!

Four focused rounds for sharper IAR math thinking

This book gives you four full Grade 7 IAR 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 Illinois 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 four-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.

Illinois 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?

Four IAR tests, 160 questions, and a focused review path

Part	What You Will Practice
Tests 1–2	Proportional relationships, unit rates, percents, rational-number operations, and careful reading.
Tests 3–4	Expressions, equations, inequalities, scale drawings, geometry, data, probability, 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.



Scan me!
For more practice
& answers

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1)

Sample	Agree	Disagree	Total
Morning	45	15	60
Afternoon	54	18	72

In a survey about a proposal, which sample shows a higher proportion of agreement?

- ☐ A. Morning
 ☐ C. Both are equal
☐ B. Afternoon
 ☐ D. Cannot be determined
- 2) In a map, a scale of 1 inch = 50 miles is used. On the map, two cities are 3.5 inches apart. What is the actual distance between the cities?
- ☐ A. 150 miles
 ☐ C. 200 miles
☐ B. 175 miles
 ☐ D. 350 miles
- 3) A circle has a diameter of 18 meters. Which step is correct to find the area?
- ☐ A. First find $r = 9$ m, then compute $A = \pi \times 9$
☐ B. First find $r = 9$ m, then compute $A = \pi \times 9^2$
☐ C. Use $A = \pi \times 18$ directly
☐ D. Use $A = \pi \times 18^2$ directly
- 4) Two datasets both have a range of 30. Which measure would help distinguish their variability further?
- ☐ A. Mode
 ☐ C. Minimum value
☐ B. Interquartile range or MAD
 ☐ D. Outlier count
- 5) A line graph shows monthly website traffic (in thousands of visitors): Jan 10, Feb 15, Mar 20, Apr 18, May 25, Jun 30. Which month shows the largest increase compared to the previous month?
- ☐ A. June (increase of 5)
 ☐ C. May (increase of 7)
☐ B. March (increase of 5)
 ☐ D. February (increase of 5)



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6) Two spinners are spun. The first spinner has sections labeled 1, 2, and 3. The second spinner has sections labeled A and B. How many outcomes are in the sample space?

☐ A. 5

☐ C. 8

☐ B. 6

☐ D. 9

7) A box plot compares reaction times (in milliseconds) for two drivers. Driver A: Median 550, IQR 100; Driver B: Median 600, IQR 200. Which driver is more reliable?

☐ A. Driver A (faster median and more consistent)

☐ C. Both drivers are equally reliable

☐ B. Driver B (slower but more variable)

☐ D. Driver B (higher median indicates faster response)

8) A card is drawn from a standard deck. What is the probability of drawing a king OR a queen?

☐ A. $\frac{4}{52}$
☐ C. $\frac{2}{52}$
☐ B. $\frac{2}{13}$
☐ D. $\frac{1}{26}$

9) A frequency table shows results from drawing cards with replacement 500 times:

Card Type	Hearts	Diamonds	Clubs	Spades
Frequency	140	125	128	107

Which suit has the lowest experimental probability?

☐ A. Hearts

☐ C. Clubs

☐ B. Diamonds

☐ D. Spades


- 10) Given raw data: 51, 54, 58, 61, 64, 68, 71, 75. In a stem-and-leaf plot, what is the correct representation?
- ☐ A. Stem 5: 1, 4, 8; Stem 6: 1, 4, 8; Stem 7: 1, 5
- ☐ B. Stem 5: 1, 4, 5, 8; Stem 6: 1, 4; Stem 7: 1, 5
- ☐ C. Stem 5: 1, 4, 8; Stem 6: 1, 4; Stem 7: 1, 5, 8
- ☐ D. Stem 5: 51, 54, 58; Stem 6: 61, 64; Stem 7: 71, 75
- 11) 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
- 12) A rectangular prism has a volume of 360 in^3 . If the length is 10 inches and the width is 6 inches, what is the height?
- ☐ A. 3 in
- ☐ B. 6 in
- ☐ C. 9 in
- ☐ D. 12 in
- 13) In a circle, the diameter is 18 cm. A chord in the same circle has a length of 18 cm. What can you conclude?
- ☐ A. The chord must be a radius
- ☐ B. The chord must be a diameter
- ☐ C. The chord is longer than the diameter
- ☐ D. The chord is impossible



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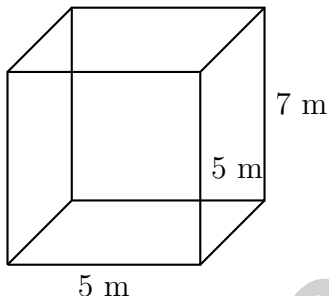
- 1) An account earns \$8.50 per month in interest. After 6 months, how much interest is earned?
- ☐ A. \$1.42 ☐ C. \$51
- ☐ B. \$14.50 ☐ D. \$102
- 2) What is $\frac{2}{3} \times \frac{5}{6}$?
- ☐ A. $\frac{7}{9}$ ☐ C. $\frac{10}{9}$
- ☐ B. $\frac{10}{18}$ ☐ D. $\frac{30}{2}$
- 3) A construction worker needs to find the side of a square concrete pad with area 289 square feet. What is the side length?
- ☐ A. 15 feet ☐ C. 17 feet
- ☐ B. 16 feet ☐ D. 18 feet
- 4) A scale drawing of a garden uses a scale of 1 cm to 2 meters. If the garden is 8 meters long, how long is it on the drawing?
- ☐ A. 2 cm ☐ C. 4 cm
- ☐ B. 3 cm ☐ D. 8 cm
- 5) A triangle has sides of 3.2 cm and 5.1 cm. Which range gives all possible values for the third side?
- ☐ A. $1.9 < c < 8.3$ cm ☐ C. $3.2 < c < 5.1$ cm
- ☐ B. $1.9 \leq c \leq 8.3$ cm ☐ D. $0 < c < 8.3$ cm



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6) A student claims that $-14 + 14 = 28$. What is the student's error?

- ☐ A. They forgot that opposites sum to 0
- ☐ B. They should have subtracted instead
- ☐ C. The answer is correct
- ☐ D. Absolute values were not used



7)

The net shown represents a rectangular prism. What is the surface area of the prism?

- ☐ A. 70 m^2
- ☐ B. 140 m^2
- ☐ C. 190 m^2
- ☐ D. 350 m^2

8) Which expression represents “twice the difference of y and 5”?

- ☐ A. $2y - 5$
- ☐ B. $2(y - 5)$
- ☐ C. $5 - 2y$
- ☐ D. $2y + 5$

9) Which expression is simplified?

- ☐ A. $3x + 2x - y$
- ☐ B. $5x + 2x - y + y$
- ☐ C. $5x - y$
- ☐ D. $2x + 3x + 4y$



- 1) A student's part-time job pays \$600 per month. After saving 25%, how much money does the student have left to spend?
- ☐ A. \$150 ☐ C. \$400
☐ B. \$300 ☐ D. \$450
- 2) Looking at the garden plant histograms again, which range of plant counts is shared by both neighborhoods (overlap region)?
- ☐ A. 20–25 plants (overlap of both distributions) ☐ C. No overlap; neighborhoods are completely separate
☐ B. 15–35 plants (entire combined range) ☐ D. Only exactly 25 plants
- 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 dimensions 3 cm × 4 cm × 6 cm. Another prism has half the dimensions of the first. What is the volume of the smaller prism?
- ☐ A. 9 cm³ ☐ C. 36 cm³
☐ B. 18 cm³ ☐ D. 72 cm³
- 5) Circle *X* has a radius of 6 cm. Circle *Y* has a diameter of 6 cm. Which circle has the larger radius?
- ☐ A. Circle *X* ☐ C. They have equal radii
☐ B. Circle *Y* ☐ D. Cannot be determined



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& answers

6) Two triangles have sides (3, 4, 5) and (3, 4, 5), respectively. Can we conclude they are congruent?

☐ A. No, they are only similar

☐ C. Yes, by SAS

☐ B. Yes, by SSS

☐ D. No, we need angle measures

7) A cube has surface area 600 cm^2 . What is its edge length?

☐ A. 5 cm

☐ C. 100 cm

☐ B. 10 cm

☐ D. 3600 cm

8) A bank account starts with a balance of \$250.75. The account loses \$12.50 per month for 5 months. What is the final balance?

9) Express 8.3×10^{-2} in standard form.

10) Which expression is equivalent to $3(2y + 7)$?

☐ A. $6y + 21$

☐ C. $3y + 10$

☐ B. $6y + 7$

☐ D. $2y + 21$



Illinois IAR 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 Illinois IAR practice test.



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Practice Test Answers and Explanations

Practice Test 1 Answers and Explanations

- 1) **Choice C is correct.** (7.SP.1-7.SP.4) Morning: $\frac{45}{60} = 0.75$ or 75%. Afternoon: $\frac{54}{72} = 0.75$ or 75%. Both show equal proportions.
- 2) **Choice B is correct.** (7.G.1-7.G.5) Using the scale: 3.5 inches $\times$ 50 miles/inch = 175 miles.
- 3) **Choice B is correct.** (7.G.4-7.G.6) Must divide diameter by 2 to get radius, then square: $A = \pi r^2$.
- 4) **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.
- 5) **Choice C is correct.** (7.SP.1-7.SP.4) Comparing month-to-month increases: Feb (+5), Mar (+5), Apr (-2), May (+7), Jun (+5). May's increase from April (18) to May (25) is 7, which is the largest.
- 6) **Choice B is correct.** (7.SP.5-7.SP.8) First spinner: 3 outcomes; second spinner: 2 outcomes. Total: $3 \times 2 = 6$ outcomes.
- 7) **Choice A is correct.** (7.SP.3) Reliability combines speed and consistency. Driver A has a faster (lower) median (550 vs. 600) and smaller IQR (100 vs. 200), meaning more predictable reaction times.
- 8) **Choice B is correct.** (7.SP.5-7.SP.8) King OR Queen: $P(\text{King}) + P(\text{Queen}) = \frac{4}{52} + \frac{4}{52} = \frac{8}{52} = \frac{2}{13}$ (mutually exclusive).
- 9) **Choice D is correct.** (7.SP.6) Compare relative frequencies: Hearts $\frac{140}{500} = 0.28$, Diamonds $\frac{125}{500} = 0.25$, Clubs $\frac{128}{500} = 0.256$, Spades $\frac{107}{500} = 0.214$. Spades has the lowest.
- 10) **Choice A is correct.** (7.SP.1-7.SP.4) Data 51, 54, 58, 61, 64, 68, 71, 75 maps: Stem 5: 1, 4, 8; Stem 6: 1, 4, 8; Stem 7: 1, 5. Answer A is correct.
- 11) **Choice D is correct.** (7.G.4-7.G.6) Each rectangle: $5 \times 3 = 15 \text{ m}^2$. Three rectangles: $15 \times 3 = 45 \text{ m}^2$.
- 12) **Choice B is correct.** (7.G.4-7.G.6) $h = \frac{V}{l \times w} = \frac{360}{10 \times 6} = \frac{360}{60} = 6$ inches.
- 13) **Choice B is correct.** (7.G.4-7.G.6) A chord with length equal to the diameter must be the diameter itself, as the diameter is the longest possible chord in a circle.
- 14) **Choice C is correct.** (7.G.1-7.G.5) Check the longest side: $9^2 = 81$ vs. $6^2 + 5^2 = 36 + 25 = 61$. Since $81 > 61$, the square of the longest side exceeds the sum of squares of the other two. The angle opposite the longest side is obtuse.
- 15) **Choice D is correct.** (7.SP.5-7.SP.8) Probability must be between 0 and 1 (inclusive). $1.01 > 1$, so it is invalid.
- 16) **Choice D is correct.** (7.NS.1-7.NS.3) $-5 - (-9) = -5 + 9 = 4$. Subtracting a larger negative gives a positive result.
- 17) **Choice B is correct.** (7.SP.1-7.SP.4) $50\% \text{ of } 360^\circ = 0.50 \times 360^\circ = 180^\circ$.
- 18) **Choice C is correct.** (7.RP.3) If $12 = 0.15 \times n$, then $n = \frac{12}{0.15} = 80$.
- 19) **Choice D is correct.** (7.RP.3) Discount amount = $60 - 36 = \$24$. Percent = $(24/60) \times 100 = 40\%$.
- 20) **The correct answer is -3.** (7.NS.1-7.NS.3) The opposite of -3 is 3, and the opposite of 3 is -3.
- 21) **Choice D is correct.** (7.RP.1-7.RP.3) Slope: $(9 - 3)/(3 - 1) = 6/2 = 3$. Line is $y = 3x$, which passes through (0, 0) (proportional).
- 22) **The correct answer is B,C.** (7.RP.1-7.RP.3) Option B: cost = $1.50 \times$ pounds (proportional, of form $y = kx$). Option C: distance = speed $\times$ time (proportional). Option A is a general trend but not a strict proportional relationship. Option D: height does not scale proportionally with age (growth rates vary).
- 23) **Choice D is correct.** (7.RP.1-7.RP.3) Unit rate = $\frac{4/5}{2/5} = \frac{4}{5} \times \frac{5}{2} = \frac{20}{10} = 2$ documents per minute.
- 24) **Choice D is correct.** (7.RP.1-7.RP.3) For $y = 3x$, the slope is 3. The red line passes through (1, 3), which satisfies $y = 3(1) = 3$.
- 25) **The correct answer is 2.** (7.NS.2) $(-2) \times 3 = -6$. Then $(-6) \times (-\frac{1}{3}) = \frac{6}{3} = 2$. Two negatives give positive.
- 26) **Choice C is correct.** (7.RP.1-7.RP.3) Unit rate is $\$120 \div 10 = \12 per book. For 15 books: $15 \times \$12 = \180 .
- 27) **Choice D is correct.** (7.RP.3) Using the proportion $\frac{33.33}{100} = \frac{x}{96}$, we get $x \approx 32$ points.
- 28) **Choice B is correct.** (7.SP.5-7.SP.8) Two of the five equal sections are labeled 1, so $P(1) = \frac{2}{5} = 0.4$.
- 29) **Choice D is correct.** (7.RP.3) Tip: $0.20 \times 36 = \$7.20$. Total bill: $36 + 7.20 = \$43.20$. Each person pays $43.20 \div 2 = \$21.60$.



Hi, Smart Reviewer!

◇ The best learning often happens after the test, when you look back and notice what worked and what needs attention. This carefully paced book gave you four steady Grade 7 practice tests, so you had repeated chances to build accuracy, pacing, and confidence. ◇

★ **Remember this:** You can use these practice tests as a map. The questions you solved quickly show strengths; the questions you missed show where to train next. ★

Review Routine

- **Sort:** Group mistakes by skill.
- **Reread:** Check whether the question was misunderstood.
- **Resolve:** Do the problem again without looking.
- **Record:** Write the lesson in one sentence.

Grade 7 test-day tip: Review in short focused sessions. Ten careful minutes can be more useful than an hour of rushing.

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

Jay Daie

Your Review Coach

PRACTICE TODAY. SUCCEED TOMORROW!

This book includes **4** 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.

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 Detailed Answers & Explanations



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Develop key math concepts and problem solving abilities.



Improve Understanding

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



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Apply your knowledge and achieve your best score!

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- ✓ The Number System
- ✓ Expressions & Equations
- ✓ Geometry
- ✓ Percents & Decimals
- ✓ Statistics & Probability
- ✓ Data Analysis
- ✓ Measurement & Conversions
- ✓ Algebraic Thinking
- ✓ And More!



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