

# 7 Illinois IAR

**7**  
PRINTED  
TESTS  
**+**  
**2**  
ONLINE  
TESTS

## Grade 6 MATH PRACTICE TESTS

Use these two additional online practice tests for extra review after the printed tests in this book.

Standards-Aligned *Steady Southern*  
Problem Solving for Comprehensive  
Assessment Program

-  7 Full-Length Printed Tests
-  Standards-Aligned Math Practice
-  Detailed Answer Keys and Explanations
-  Build Confidence. Achieve Success.



You've  
Got  
This!

 **PREPARE  
PRACTICE  
SUCCEED**

 **PRACTICE  
WITH PURPOSE**

 **STRENGTHEN  
MATH SKILLS**

 **REVIEW, IMPROVE,  
AND SUCCEED**

# 7 Illinois IAR Grade 6 Math Practice Tests

*Standards-Aligned Prairie-To-City Reasoning for Illinois Assessment of Readiness*



Seven complete 40-question Grade 6 practice rounds for IAR, built for prairie-to-city reasoning with ratios, rational numbers, expressions, equations, geometry, statistics, answer keys, and clear explanations for every item.

**Jay Daie and Reza Nazari**



# Copyright ©

## Testinar Inc



Published by Testinar Inc

[Testinar.com](http://Testinar.com)

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the author, except in the case of brief quotations embodied in critical reviews and certain other noncommercial uses permitted by copyright law, including Section 107 or 108 of the 1976 United States Copyright Act.

This publication is independently produced and has no official connection to any state, district, or national testing program.

Test names and organizational names used herein are the property of their respective trademark holders.



*Copyright ©*

# Welcome, Illinois Math Explorer!

Eight focused rounds using prairie-to-city reasoning

This book gives you seven full Grade 6 practice tests for IAR. Each round uses prairie grids, city routes, and clear written work as a fresh mental backdrop while you read closely, choose a smart strategy, show your work, and check whether your answer makes sense.

## Your Illinois Practice Promise

Keep the logic visible: line up numbers, label units, and use the answer choices as a final check.

Read

Plan

Check

## How to Use This Book

A seven-session routine for prairie-to-city reasoning

1. **Preview the skills.** Scan the quick review pages before beginning the first round.
2. **Work in order.** Take one 40-question test at a time in a quiet place.
3. **Mark confidence.** Put a small star beside problems where your plan felt strong.
4. **Correct actively.** Retry missed items before reading the full explanation.
5. **Plan the next round.** Use the growth log to choose one habit and one skill to practice.

**Illinois review rhythm:** Complete a round, review patterns in the misses, and set a short Chicago-strong target for next time.



## What Is Inside?

Eight IAR tests, 320 questions, and a full review path

Part	What You Will Practice
Tests 1–3	Foundation rounds for ratios, rational numbers, operations, and careful reading.
Tests 4–6	Skill-building rounds with expressions, equations, geometry, data, and problem models.
Test 7	Final stamina round for mixed review, neat work, and flexible strategy choices.
Answer Pages	Compact keys and explanations that show why each answer works.

The tests are mixed on purpose. Prairie-to-city reasoning means recognizing the skill even when the next question changes topic, changes format, or asks for an explanation.



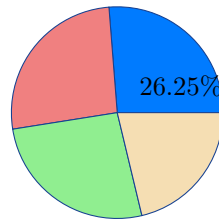
Scan me!  
For more practice  
& answers

# Table of Contents

★ Practice Test 1	_____	14
★ Practice Test 2	_____	29
★ Practice Test 3	_____	44
★ Practice Test 4	_____	60
★ Practice Test 5	_____	74
★ Practice Test 6	_____	91
★ Practice Test 7	_____	107
<b>Practice Test Answer Keys</b>	_____	<b>123</b>
<b>Practice Test Answers and Explanations</b>	_____	<b>128</b>

- 1) A student asks: “Do sixth graders prefer soccer or basketball?”  
This is a statistical question. What is the population?
- A. Soccer players                       C. All sixth graders  
 B. Basketball players                 D. Students who answered the survey
- 2) A tennis comparison: Alice mean = 95 mph, median = 96 mph; Bob mean = 95 mph, median = 93 mph. Which is most reasonable?
- A. Alice has some very slow serves.     C. Both are identical in performance.  
 B. Bob has some very slow serves.       D. Alice is consistently faster.
- 3) The probability that a train arrives on time is 65%. What is the probability that the train is late, expressed as a decimal?
- A. 0.25                                       C. 0.50  
 B. 0.35                                       D. 0.65
- 4) A scientist records bird counts at different altitudes. The stem-and-leaf plot uses a 2-digit stem (like 15, 16, 17). If stem 16 has leaves 0, 3, 7, what are the data values?
- A. 160, 163, 167                       D. Cannot determine without the full plot  
 B. 16, 16, 16  
 C. 1603, 1663, 1673





5)

A store sold 640 items. The circle graph shows 26.25% were on sale. How many items were on sale?

- A. 168
- B. 156
- C. 174
- D. 188

6) Reduce  $32 : 40$  to simplest form.

- A.  $8 : 10$
- B.  $16 : 20$
- C.  $4 : 5$
- D.  $40 : 32$

7) Three books cost \$12.75, \$8.50, and \$15.25. What is the total cost of the books?

8) A table shows two equivalent methods for doubling a recipe. Which is true?

Cups	Cost
1	\$2
2	\$4

Method 1

Cups	Cost
2	\$3
4	\$6

Method 2

- A. Method 1: unit price \$2/cup; Method 2: \$1.50/cup
- B. Both methods cost the same
- C. Method 1 is always cheaper
- D. The methods cannot be compared



Scan me!  
For more practice  
& answers

9) A quadrilateral has vertices at  $(1, 2)$ ,  $(4, 2)$ ,  $(5, 6)$ , and  $(2, 6)$ . What is the length of the top side?

A. 2 units

C. 4 units

B. 3 units

D. 5 units

10) On a number line, point A is at  $-3$  and point B is at  $4$ . What is the distance between the two points?

11) Which of the following is a valid net for a rectangular prism with dimensions  $2 \times 3 \times 4$  units?

A. Six congruent squares in a cross

C. Six different-sized rectangles

B. Two  $2 \times 3$  rectangles, two  $2 \times 4$  rectangles, two  $3 \times 4$  rectangles

D. One  $2 \times 3$ , four  $3 \times 4$ , one  $2 \times 4$

12) Which statement is **true** about the radius and diameter of a circle?

A. Radius is the distance across the circle

C. Radius equals the diameter

B. Diameter is twice the radius

D. Diameter is half the radius

13) A box plot of test scores shows  $Q1 = 72$ , median =  $80$ , and  $Q3 = 88$ . Which value represents the interquartile range?

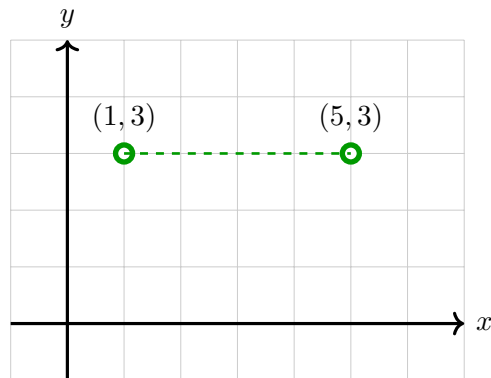
A. 8

C. 20

B. 16

D. 88





1)

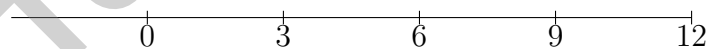
What is the horizontal distance between (1, 3) and (5, 3)?

- A. 3 units                       C. 5 units  
 B. 4 units                       D. 6 units

2) Divide 2,805 by 15.

- A. 187                       C. 175  
 B. 185                       D. 195

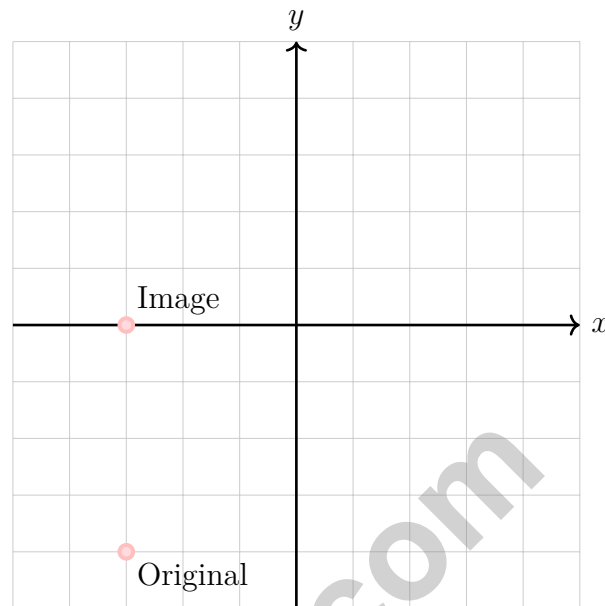
3) A runner is doing interval training. Starting at position 0, the runner sprints forward 15 yards, then backward 8 yards, then forward 3 yards. What is the runner's final position relative to the start?



- A. 10 yards forward                       C. 8 yards forward  
 B. 20 yards backward                       D. 26 yards forward







1)

A point is translated and moves from  $(-3, -4)$  to  $(-3, 0)$ . What is the translation vector?

- A. 0 units horizontally, 4 units up       C. 4 units right, 3 units up  
 B. 3 units left, 0 units vertically       D. 3 units right, 4 units down

2) In a box plot, what percentage of data lies between  $Q_1$  and  $Q_3$ ?

- A. 25%       C. 75%  
 B. 100%       D. 50%

3) What is  $\frac{11}{12} \div \frac{1}{3}$ ?

- A.  $\frac{11}{36}$        C.  $2\frac{3}{4}$   
 B.  $\frac{4}{11}$        D.  $\frac{12}{11}$



Scan me!  
For more practice  
& answers

4)



The dots show lavender and cyan counters. Write the ratio of lavender to total in simplest form.

 A. 5 : 2 C. 2 : 5 B. 7 : 5 D. 5 : 75) Solve for  $x$ :  $x - 4 = 14$ .

6) A student claims: "If the ratio of apples to oranges is 7 : 3, then the ratio of oranges to apples must be 3 : 7."

Is this claim correct?

 A. No, the ratio cannot be reversed. D. Yes, when the order is reversed, the parts of the ratio are reversed in the same way. B. No, the order does not matter, so both must be 7 : 3. C. No, the ratio of oranges to apples should be 7 : 3 as well.

**Illinois IAR Practice Test Answer Keys****How to use this Illinois IAR answer section with a Grade 6 student:**

1. check the answer first, then write one quick reason the choice is correct
2. mark questions to try again, especially the skills that feel connected to prairie-to-city reasoning
3. rework the problem before reading the full explanation, using this reminder:  
Keep the logic visible: line up numbers, label units, and use the answer choices as a final check.

**A calm Illinois correction routine turns every missed item into useful practice. Complete a round, review patterns in the misses, and set a short Chicago-strong target for next time.**



Scan me!  
For more practice  
& answers

## Illinois Practice Test Answers and Explanations

Review the seven printed IAR tests with organized, resilient, and ready for the next set habits.

### Practice Test 1 Answers and Explanations

- 1) **Choice C is correct.** **(6.SP.A.2)** The population is the entire group of interest: all sixth graders. A sample would be the subset of sixth graders who actually answered the survey.
- 2) **Choice A is correct.** **(6.SP.B.5)** Alice's median (96) > mean (95) suggests low outliers pulling mean down. Bob's median (93) < mean (95) suggests high outliers.
- 3) **Choice B is correct.** **(6.NS.B.3)** If  $P(\text{on time}) = 65\% = 0.65$ , then  $P(\text{late}) = 1 - 0.65 = 0.35$  or 35%.
- 4) **Choice A is correct.** **(6.SP.B.4)** With a 2-digit stem (16), each leaf appends to form the value. Stem 16 with leaves 0, 3, 7 gives values 160, 163, 167.
- 5) **Choice A is correct.** **(6.NS.A.1)** 26.25% of 640 is  $0.2625 \times 640 = 168$  items.
- 6) **Choice C is correct.** **(6.RP.A.1)** Both 32 and 40 are divisible by 8. Dividing both parts by 8 gives  $\frac{32}{8} : \frac{40}{8} = 4 : 5$ .
- 7) **The correct answer is 36.50.** **(6.NS.B.3)** Budget shopping? Stack the cents:  $\$12.75 + \$8.50 + \$15.25 = \$36.50$  altogether.
- 8) **Choice A is correct.** **(6.RP.A.3)** Method 1: 1 cup costs \$2, so unit price = \$2/cup. Method 2: 2 cups cost \$3, so unit price =  $\$3 \div 2 = \$1.50/\text{cup}$ . The methods have different unit rates and cannot be called equivalent recipes in terms of cost efficiency.
- 9) **Choice B is correct.** **(6.G.A.3)** The top side goes from (2, 6) to (5, 6), both at  $y = 6$ . Distance is  $5 - 2 = 3$  units.
- 10) **The correct answer is 7.** **(6.NS.C.6c)** Distance =  $4 - (-3) = 4 + 3 = 7$  units. Use the formula: larger value minus smaller value.
- 11) **Choice B is correct.** **(6.G.A.4)** A rectangular prism with dimensions  $2 \times 3 \times 4$  has 6 faces: two opposite faces of size  $2 \times 3$ , two of size  $2 \times 4$ , and two of size  $3 \times 4$ . Choice B lists exactly this composition.
- 12) **Choice B is correct.** **(6.RP.A.1)** The diameter passes through the center and is  $d = 2r$ . Choices A and C are incorrect; choice D reverses the relationship.
- 13) **Choice B is correct.** **(6.SP.B.5c)**  $IQR = Q_3 - Q_1 = 88 - 72 = 16$ . The IQR tells us the spread of the middle half of the scores.
- 14) **Choice B is correct.** **(6.SP.B.4)** Add the frequencies for the 5–10 and 10–15 ranges:  $16 + 18 = 34$  teenagers.
- 15) **Choice A is correct.** **(6.NS.C.8)** Since  $|x - 8| = 5$ , then  $x = 8 - 5 = 3$  or  $x = 8 + 5 = 13$ .
- 16) **Choice C is correct.** **(6.NS.B.3)** Starting balance:  $-50$ . Adding a deposit of 120:  $-50 + 120 = 70$ .
- 17) **Choice C is correct.** **(6.EE.A.3)** Adding a deposit to an overdrawn balance:  $-35 + 50 = 15$  dollars.
- 18) **The correct answer is Both A and D have a quotient of 156.** **(6.NS.B.2)** A:  $4,680 \div 30 = 156 \checkmark$ . B:  $4,500 \div 30 = 150$ . C:  $4,500 \div 25 = 180$ . D:  $2,808 \div 18 = 156 \checkmark$ . E:  $6,000 \div 40 = 150$ . Verify:  $30 \times 156 = 4,680$  and  $18 \times 156 = 2,808$ .
- 19) **Choice D is correct.** **(6.EE.A.2a)** The tape diagram shows two equal parts of length  $2v$  placed end-to-end. This represents the sum:  $2v + 2v = 4v$ .
- 20) **Choice D is correct.** **(6.EE.B.6)** "2 less than" means subtract 2 from the book's cost.
- 21) **Choice C is correct.** **(6.EE.B.5)** Multiply both sides by 4:  $x = 6 \times 4 = 24$ .
- 22) **Choice C is correct.** **(6.RP.A.1)**  $Q_1$ ,  $Q_2$  (median), and  $Q_3$  are the three quartiles shown in a box plot. They divide the dataset into four equal parts of 25% each.
- 23) **The correct answer is (3, -2).** **(6.NS.C.8)** When reflecting across the  $x$ -axis, the  $x$ -coordinate stays the same and the  $y$ -coordinate changes sign. So (3, 2) becomes (3, -2).
- 24) **Choice A is correct.** **(6.RP.A.3d)** A rate compares two quantities with different units. Divide total distance by total time to find the unit rate:  $200 \div 4 = 50$  miles per hour. The error is using the raw distance instead of dividing.
- 25) **Choice C is correct.** **(6.RP.A.3c)**  $\frac{9}{10} = \frac{90}{100} = 90\%$ .
- 26) **Choice B is correct.** **(6.RP.A.3c)** Tax is 18% of \$75 =  $0.18 \times 75 = \$13.50$ . Total is  $\$75 + \$13.50 = \$88.50$ .



## Hi, Strong Climber!

◇ You climbed all 7 tests. One step at a time. That takes patience and grit. The view from the top is amazing because you earned it! ◇

★ **Mountain guides say:** steady steps win the climb. You climbed steady. You stayed strong. ★

### Climber's Skills

- **Strong Steps:** You move forward, problem by problem.
- **Steady Pace:** You don't rush. You don't stop.
- **Map Skills:** You read questions carefully.
- **Top of the Mountain:** You can finish a long test.

**Guide's tip:** on test day, take small breaths between problems. One foot, then the next. You'll reach the top!

If you want to share something or ask a question, please email me at [jay@testinar.com](mailto:jay@testinar.com).

**Jay Daie**

Your Math Trail Guide

# MASTER TODAY. SUCCEED TOMORROW.

This Grade 6 Math Practice Tests book is designed to help students strengthen their math skills, master important concepts, and build the confidence they need to excel on comprehensive assessments.

With 7 full-length printed tests and 2 online tests, students get the review, practice, and realistic test experience they need to improve accuracy, develop problem-solving abilities, and reach their full potential.

Perfect for classroom use, homework, test preparation, and extra practice at home.



## PERFECT FOR:

- ✓ Classroom Practice
- ✓ Homework & Review
- ✓ Independent Learning
- ✓ Test Preparation
- ✓ Skill Reinforcement
- ✓ Building Confidence

★ PRACTICE TODAY.  
SUCCEED TOMORROW.

## WHAT STUDENTS WILL 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 aligned with standards through meaningful practice.



### Test Confidence

Become familiar with test formats and improve accuracy and speed.



### Achieve Success

Build confidence and perform your best on test day.

## TOPICS COVERED

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



### 2 ONLINE TESTS

Extra online practice to reinforce learning and build confidence.

## MORE PRACTICE. GREATER RESULTS.

Give your child the tools needed to develop strong math skills, confidence, and a positive attitude toward learning.



7 FULL-LENGTH  
PRINTED TESTS



STANDARDS-  
ALIGNED PRACTICE



DETAILED ANSWER  
KEYS & EXPLANATIONS