

# 6

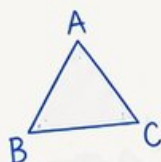
# Illinois IAR

GRADE  
**6**  
MATH

## PRACTICE TESTS

Standards-Aligned  
Steady Southern  
Problem Solving for  
Comprehensive  
Assessment Program

$$2x + 3 = 11$$



$$7^2 = 49$$

BUILD SKILLS.  
GAIN CONFIDENCE.  
**SUCCEED!**



### 6 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



### 6 PRINTED TESTS +2 ONLINE TESTS

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



### PRACTICE

Sharpen skills with targeted practice tests



### REVIEW

Understand concepts and strengthen skills



### SUCCEED

Build confidence and achieve your best

# 6 Illinois IAR Grade 6 Math Practice Tests

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



Six 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**



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# Welcome, Illinois Math Explorer!

Eight focused rounds using prairie-to-city reasoning

This book gives you six 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 six-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 1–2	Foundation rounds for ratios, rational numbers, operations, and careful reading.
Tests 3–5	Skill-building rounds with expressions, equations, geometry, data, and problem models.
Test 6	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.

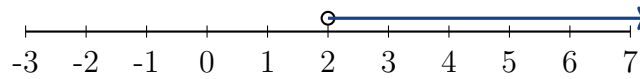


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For more practice  
& answers

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1) Which statement about the graph is TRUE?



- A. The number 2 is a solution
- B. The number 1 is a solution
- C. The number 3 is a solution
- D. The number 0 is a solution

2) A baker needs more than 2 cups of sugar but no more than 4 cups. Which pair of inequalities matches this, using  $s$  for cups?

Condition	Meaning
More than 2 cups	$s > 2$
No more than 4 cups	$s \leq 4$

- A.  $s > 2$  and  $s \leq 4$
  - B.  $s \geq 2$  and  $s < 4$
  - C.  $s < 2$  and  $s > 4$
  - D.  $s \leq 2$  and  $s \geq 4$
- 3) The MAD of Set X is 3.5 and the MAD of Set Y is 1.8. Which set has greater spread?
- A. Set X has greater spread.
  - B. Set Y has greater spread.
  - C. Both have the same spread.
  - D. Cannot be determined from MAD alone.
- 4) Which number is located farthest from  $-1$  on a number line?
- A.  $-3.2$
  - B.  $-2.1$
  - C.  $0.8$
  - D.  $1.5$

5) After distributing  $5(x + 6)$ , what is the constant term?

6) The point  $(5, -3)$  is located in which quadrant?

A. Quadrant I

C. Quadrant III

B. Quadrant II

D. Quadrant IV

7)

City	A	B	C	D
Temperature ( $^{\circ}\text{C}$ )	-5	2	-1	0

Which city is coldest?

A. City A

C. City C

B. City B

D. City D

8) The distance between points  $(4, 5)$  and  $(4, y)$  is 7 units. The points have the same  $x$ -coordinate. What could  $y$  be?

A.  $y = -3$  or  $y = 12$

C.  $y = -1$  or  $y = 11$

B.  $y = -2$  or  $y = 12$

D.  $y = 0$  or  $y = 10$

9) Two integers are opposite and sum to 0. If one integer is  $-6$ , what is the other?

A. 0

C. 6

B.  $-6$

D. 1



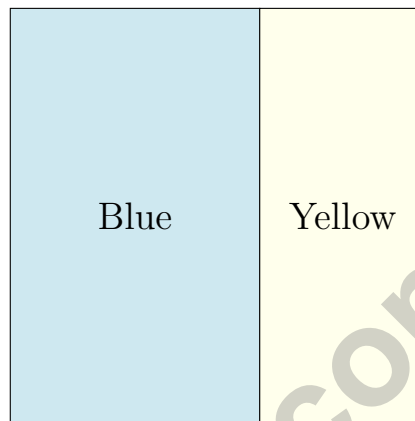
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4) A school reports median test score = 78, but mean = 72. What does this suggest?

- A. Most students scored above 78.       C. Some students scored much lower than the median.
- B. Most students scored below 72.       D. The distribution is skewed right.



5)

Based on the grid above, what is the probability of selecting a blue square if one square is picked at random?

- A.  $\frac{3}{10}$        C.  $\frac{3}{5}$
- B.  $\frac{1}{2}$        D.  $\frac{2}{5}$
- 6) A student records the number of minutes spent on homework: 24, 31, 28, 35, 29, 32, 26. Arranging in a stem-and-leaf plot, the data spans:
- A. One stem (20s)       C. Three stems
- B. Two stems (20s and 30s)       D. Cannot determine



1) A rectangular prism has a base area of  $\frac{15}{2}$  cm<sup>2</sup> and height 4 cm. What is its volume?

A. 20 cm<sup>3</sup>

C. 40 cm<sup>3</sup>

B. 30 cm<sup>3</sup>

D. 60 cm<sup>3</sup>

2) A student created a ratio table but made an error. Which row does **NOT** belong in a table showing the ratio 5 : 7?

Row	Values
A	5 : 7
B	10 : 14
C	15 : 20
D	20 : 28

A. Row A

C. Row C

B. Row B

D. Row D

3) Which rate is equivalent to \$8 per gallon?

A. \$16 per 2 gallons

C. \$24 per 4 gallons

B. \$4 per gallon

D. \$40 per 6 gallons

4) What is 0.43 as a percent?

A. 4.3%

C. 0.43%

B. 43%

D. 430%



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& answers

5) A store sells shirts regularly at \$35 each. During a clearance, they are 60% off. What is the clearance price?

- A. \$14
- B. \$15
- C. \$20
- D. \$21

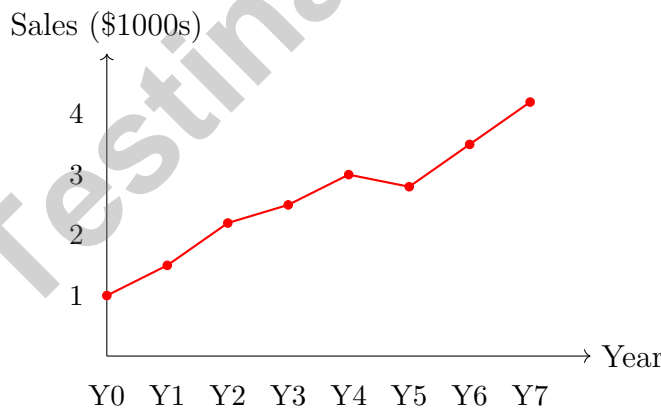
6) Two storage plans charge monthly fees: Plan P: No upfront cost, \$8 per month Plan Q: \$20 upfront, then \$3 per month

After 6 months, which plan shows a proportional relationship to the time elapsed?

- A. Plan P only
- B. Plan Q only
- C. Both plans are proportional
- D. Neither plan is proportional

7) A savings plan requires saving \$75 per month for 3 years. What is the total amount saved?

- A. \$2400
- B. \$3000
- C. \$2900
- D. \$2700



8) A business tracked sales (in thousands of dollars) over 7 consecutive years. Between which two consecutive years did sales DECREASE?

- A. Between years 3 and 4
- B. Between years 4 and 5
- C. Between years 5 and 6
- D. Between years 6 and 7

**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!  
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& answers

## Illinois Practice Test Answers and Explanations

Review the six 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.EE.B.8) The open circle at 2 and arrow pointing right represent  $x > 2$ . Only 3 (from the choices) satisfies  $x > 2$ .
- 2) **Choice A is correct.** (6.EE.B.8) “More than 2” gives  $s > 2$ . “No more than 4” gives  $s \leq 4$ . Together:  $s > 2$  and  $s \leq 4$ .
- 3) **Choice A is correct.** (6.SP.B.5c) A higher MAD indicates greater average distance from the mean, so Set X with  $MAD = 3.5$  has more spread than Set Y with  $MAD = 1.8$ .
- 4) **Choice A is correct.** (6.NS.C.6c) Distance from  $-1$ :  $|-3.2 - (-1)| = |-2.2| = 2.2$ , which is greater than all other distances.
- 5) **The correct answer is 30.** (6.EE.A.3)  $5(x + 6) = 5x + 30$ , so the constant term is 30.
- 6) **Choice D is correct.** (6.NS.C.8) The point  $(5, -3)$  has a positive  $x$ -coordinate and a negative  $y$ -coordinate. Points with  $(+, -)$  are located in Quadrant IV.
- 7) **Choice A is correct.** (6.NS.C.7d) City A has the lowest temperature at  $-5^\circ C$ . Ordering:  $-5 < -1 < 0 < 2$ .
- 8) **Choice B is correct.** (6.NS.C.8) Since  $|5 - y| = 7$ , then  $y = 5 - 7 = -2$  or  $y = 5 + 7 = 12$ .
- 9) **Choice C is correct.** (6.NS.B.3) Opposite integers sum to zero:  $-6 + 6 = 0$ . The opposite of  $-6$  is 6.
- 10) **Choice B is correct.** (6.EE.A.3) Total score is the sum:  $-4 + 2 = -2$  (2 under par).
- 11) **Choice B is correct.** (6.EE.A.2a) “A number  $x$  minus 9” means we subtract 9 from  $x$ , giving  $x - 9$ . Order matters:  $9 - x$  would be wrong.
- 12) **Choice C is correct.** (6.EE.A.2c) Substitute:  $-2(-1) + (-5) - 3 = 2 - 5 - 3 = 0$ .
- 13) **Choice B is correct.** (6.EE.B.6) Total pages = pages per day  $\times$  number of days =  $10r$ .
- 14) **Choice B is correct.** (6.EE.B.5) Subtract 3.5 from both sides:  $x = 9.2 - 3.5 = 5.7$ .
- 15) **The correct answer is 15.** (6.EE.C.9) The cost increases by \$30 for every 2 hours. So the rate is  $\frac{\$30}{2 \text{ hours}} = \$15$  per hour. Check: 2 h at \$15/h costs \$30; 4 h costs \$60; 6 h costs \$90.
- 16) **Choice D is correct.** (6.G.A.1) Area =  $b \times h$ , so  $60 = 12 \times h$ . Dividing both sides by 12:  $h = 5$  cm.
- 17) **Choice D is correct.** (6.G.A.2) The correct volume is  $V = 2.5 \times 3 \times 4 = 7.5 \times 4 = 30 \text{ m}^3$ . The student forgot to multiply by the height.
- 18) **Choice B is correct.** (6.G.A.1) The formula for a triangle is Area =  $\frac{1}{2} \times \text{base} \times \text{height}$ . The student multiplied base and height but forgot the  $\frac{1}{2}$  factor. The correct area =  $\frac{1}{2} \times 8 \times 6 = 24$  square units.
- 19) **The correct answer is 24.** (6.G.A.1) Solving:  $84 = \frac{1}{2} \times b \times 7 \Rightarrow b = 24$  m.
- 20) **Choice A is correct.** (6.NS.C.8) Translate left:  $3 - 2 = 1$ . Translate up:  $1 + 3 = 4$ . So  $N' = (1, 4)$ .
- 21) **The correct answer is 4 and 12.** (6.NS.B.4) The number of boxes must divide both 48 and 60. Choice B works because both numbers are divisible by 4. Choice D works because both numbers are divisible by 12. Choices A, C, and E do not divide both amounts evenly.
- 22) **Choice B is correct.** (6.SP.A.2) Student 2’s question asks about many sixth graders (variability expected), requiring data collection. Students 1 and 3 ask about one person’s single preference, which have fixed answers.
- 23) **Choice B is correct.** (6.SP.A.2) Mean increased from 150 to 155 (slightly more customers). Range decreased from 80 to 20 (much more consistent day-to-day).
- 24) **Choice A is correct.** (6.SP.B.5c) Mean =  $\frac{8 + 10 + 6 + 12}{4} = \frac{36}{4} = 9$ .
- 25) **Choice B is correct.** (6.RP.A.1) IQR =  $Q_3 - Q_1 = 32 - 20 = 12$ .
- 26) **Choice A is correct.** (6.SP.B.5) For symmetric distributions, mean and median are nearly equal and both represent the center well.



Scan me!  
For more practice  
& answers

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Lab Notes for a Young Scientist

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## Hi, Curious Scientist!

◇ 6 tests. So many experiments! You tested ideas. You watched what worked. You learned a lot. That's how scientists work—and how you work! ◇

★ **Scientists know:** mistakes are facts, not failures. Every problem you missed taught you something. You used those facts to do better next time. ★

### Lab Results

- **Hypothesis:** CONFIRMED! Practice makes you better.
- **Method:** STRONG! You try, watch, and adjust.
- **Data:** CAREFUL! You read and copy numbers right.
- **Conclusion:** READY! You can do this test.

**Scientist tip:** on test day, stay curious. Ask, "What is this asking?" Then experiment with your math tools. You will find the answer!

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 Scientist

# PRACTICE 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 6 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.

6  
PRINTED  
TESTS

+  
2  
ONLINE  
TESTS

## PERFECT FOR:

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

★ BUILD SKILLS.  
GAIN CONFIDENCE.  
SUCCEED!

## 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.



6 FULL-LENGTH  
PRINTED TESTS



2 ONLINE  
PRACTICE TESTS



DETAILED ANSWER  
EXPLANATIONS