

Illinois Algebra 2 Quizzes

Quick Topic Assessments with Answer Key

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QUICK CHECKS FOR ALGEBRA 2 FOUNDATIONS

Algebra 2 Math Quizzes

Chapter 1 Topic Assessments • Fast Scoring • Answer Key

These short quizzes help students check the exact Algebra 2 foundation skill they just studied: real numbers, expression structure, equations, inequalities, formulas, and absolute value.

Each quiz is focused enough for class warm-ups, exit tickets, tutoring sessions, homework checks, or fast test-prep review.



One Skill

*each quiz stays
topic focused*



10-15 Min

*easy to fit into
a lesson block*



Answer Key

*answers with
quick explanations*



How to Use This Quiz Pack

A simple routine

- 1** *Pick the matching topic.* Use the table of contents to choose the quiz that matches the lesson.
- 2** *Give students one clean attempt.* Most quizzes work well as 10-15 minute checks.
- 3** *Score quickly.* Use the answer key to mark each item and note the score at the top of the quiz.
- 4** *Reteach the pattern, not just the problem.* Wrong signs, wrong interval endpoints, and missed distribution usually point to the next mini-lesson.

Flexible classroom uses

Exit Ticket
one topic check

Small Group
targeted practice

Retake Tool
show growth after review

 Short quizzes make progress visible without taking over the whole period.

Chapter 1 Quiz Tracker

Use this page to spot which foundation skills are ready and which ones need a short review before students move deeper into Algebra 2.

Quiz	Topic	Score	Retake
1	Real Number System and Set Notation		
2	Properties and Order of Operations		
3	Integer Exponents and Scientific Notation		
4	Evaluating Algebraic Expressions		
5	Simplifying Algebraic Expressions		
6	Solving Linear Equations		
7	Literal Equations and Formulas		
8	Linear Inequalities		
9	Compound Inequalities and Interval Notation		
10	Absolute Value Equations		
11	Absolute Value Inequalities		

★ Quick scoring guide

80-100% Ready for mixed practice or the next topic.






60-79% Review the missed question type, then retake.

Below 60% Reteach the skill in a small group before moving on.

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CHAPTER

1

Algebra 2 Foundations

★ *What's Inside* ★

Quiz 1: Real Number System and Set Notation 2



CHAPTER 1

Real Number System and Set Notation

Name: _____

Date: _____

★ Score: ____ / 8

1 Which number is irrational?

A. $\sqrt{64}$

B. $0.\overline{18}$

C. $\sqrt{45}$

D. $-\frac{13}{5}$

2 What is the most precise classification of $\sqrt{81}$?

A. natural number

B. integer but not whole

C. rational but not integer

D. irrational number

3 Write $\{x \mid -2 \leq x < 5\}$ in interval notation.

Interval notation: _____

4 Which interval represents all real numbers less than or equal to 3?

A. $(-\infty, 3]$

B. $(-\infty, 3)$

C. $[3, \infty)$

D. $(3, \infty)$

5 True or False: Every integer is a rational number.

 True False6 Which statement describes $(-\infty, -1) \cup (4, \infty)$?

A. $x < -1$ and $x > 4$

B. $x < -1$ or $x > 4$

C. $-1 < x < 4$

D. $-1 \leq x \leq 4$

7 Use the number line. What interval is shown?



A. $[-3, 2]$

B. $(-3, 2]$

C. $[-3, 2)$

D. $(-\infty, -3) \cup (2, \infty)$

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- 8 A student says $0.272727\dots$ is irrational because it never ends. What is the error?

Error: _____

PREVIEW



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CHAPTER

3

Functions, Transformations, and Inverses

★ *What's Inside* ★

Quiz 2: Function Notation and Evaluation 5



CHAPTER 3

Function Notation and Evaluation

Name: _____

Date: _____

★ Score: ____ / 8

1 If $f(x) = x^2 - 3x + 1$, find $f(-2)$.

A. -9

B. -1

C. 11

D. 3

2 If $g(x) = 2x - 5$, find $g(a + 1)$.

Expression: _____

3 Use the table to find $h(4)$.

x	-2	0	4	7
$h(x)$	9	3	-5	1

A. 4

B. -5

C. 7

D. 1

4 Use the graph. What is $p(2)$?



A. 2

B. 3

C. 4

D. 5



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Answer Key & Explanations



Answer Key

First try each quiz on your own, then check your work here.

Chapter 1

Quiz 1 *Answer Key* Real Number System and Set Notation

1 C ($\sqrt{45}$)

2 A (natural number)

3 $[-2, 5)$

4 A $((-\infty, 3])$

5 True

6 B ($x < -1$ or $x > 4$)

7 B $([-3, 2])$

8 It repeats, so it is rational.

Quiz 1 Explanations Real Number System and Set Notation

- 1 Check whether each number can be written as a ratio of integers. $\sqrt{64} = 8$, $0.\overline{18}$ repeats, and $-\frac{13}{5}$ is rational, but $\sqrt{45}$ is irrational because 45 is not a perfect square.
- 2 First simplify the radical: $\sqrt{81} = 9$. Since 9 is a counting number, the most precise listed set is natural number, even though it is also whole, integer, and rational.
- 3 Translate each inequality symbol into endpoint notation. The symbol \leq includes -2 , so use a bracket there, while $<$ excludes 5, so use a parenthesis on the right.
- 4 Numbers less than 3 extend left forever, so the interval begins at $-\infty$. The phrase "or equal to" includes 3, so the finite endpoint must use a bracket.



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- 5 A rational number is any number that can be written as a quotient of integers. Every integer n can be written as $\frac{n}{1}$, so every integer is rational.
- 6 The union symbol means values can come from either interval, not both at once. The graph would have one ray left of -1 and another ray right of 4 , so the statement uses “or.”
- 7 Read the endpoints directly from the number line. The open circle at -3 means -3 is not included, while the closed circle at 2 means 2 is included.
- 8 A nonterminating decimal is rational when it has a repeating block. Here the block 27 repeats forever, so the decimal can be written as a fraction and is not irrational.

Chapter 3

Quiz 2 Answer Key Function Notation and Evaluation

1 C (11)

2 $2a - 3$

3 B (-5)

4 B (3)

5 A (10 cm)

6 B (The output is 14 when the input is 6.)

7 6

8 The square of -3 is positive.



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 **Quiz 2 Explanations** *Function Notation and Evaluation*

1 Substitute -2 for every x using parentheses. Then $f(-2) = (-2)^2 - 3(-2) + 1 = 4 + 6 + 1 = 11$.

2 Replace x with the entire input $a + 1$. Then $g(a + 1) = 2(a + 1) - 5 = 2a + 2 - 5 = 2a - 3$.

3 The notation $h(4)$ asks for the output when the input is 4. In the table, the entry under $x = 4$ is -5 .

4 The value $p(2)$ is the y -value on the graph when $x = 2$. The marked point $(2, 3)$ shows that $p(2) = 3$.

5 Substitute 20 for t : $H(20) = 18 - 0.4(20) = 18 - 8 = 10$. The output is a height, so the unit is centimeters.

6 Function notation names an input-output pair. The expression $f(6) = 14$ means the function value, or output, is 14 for input 6.

7 Set the output equal to 31: $4x + 7 = 31$. Subtract 7 to get $4x = 24$, then divide by 4 to get $x = 6$.

8 The input must be squared before multiplying by 2. Since $(-3)^2 = 9$, the correct value is $2(9) + 1 = 19$, not -17 .

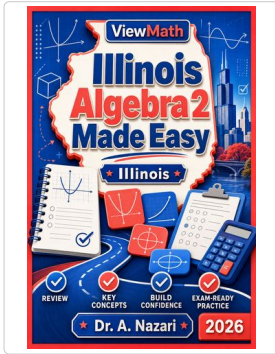


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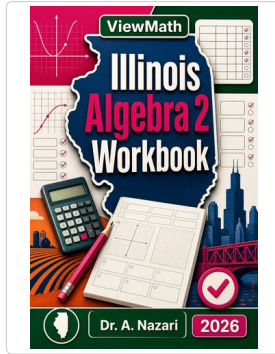
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Study Guide



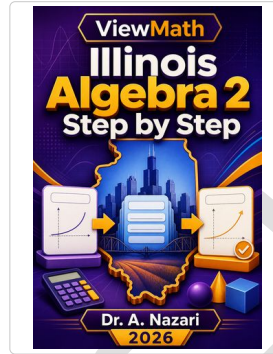
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Workbook



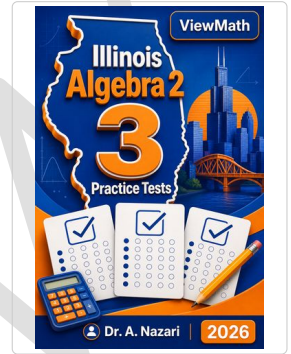
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Step-by-Step



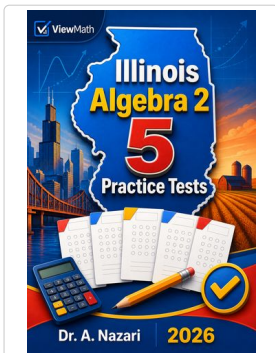
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3 Practice Tests



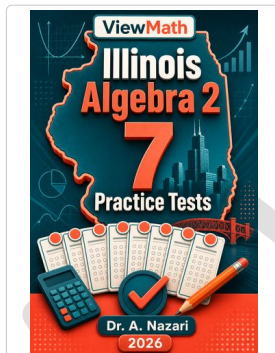
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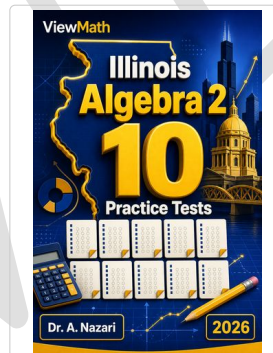
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7 Practice Tests



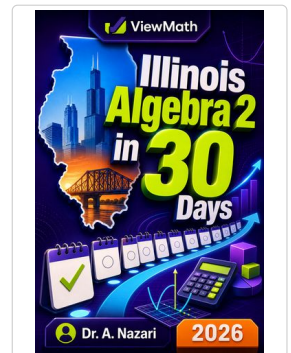
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10 Practice Tests



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Math in 30 Days



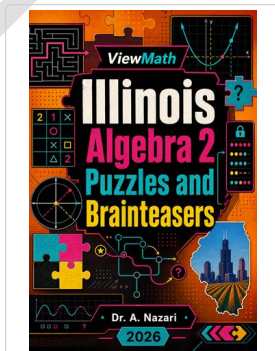
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Math in 10 Days



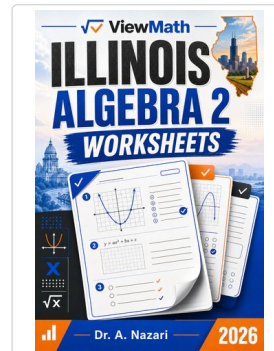
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