

# Pennsylvania 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

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## 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  $-17$ .

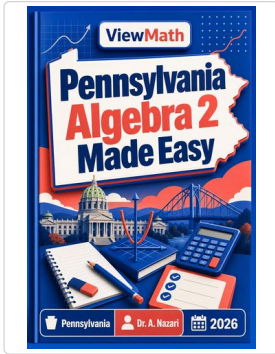


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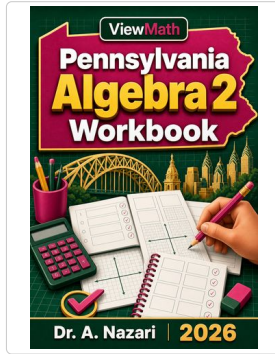
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Study Guide



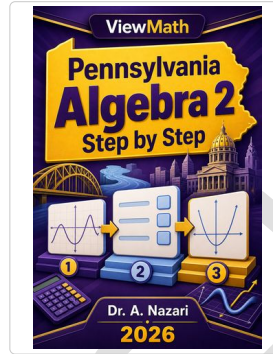
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Workbook



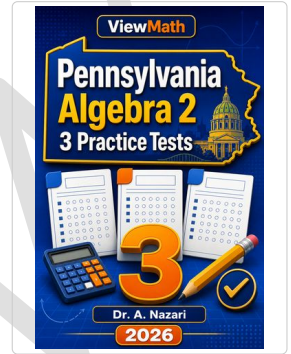
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Step-by-Step



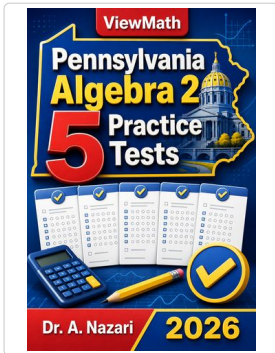
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3 Practice Tests



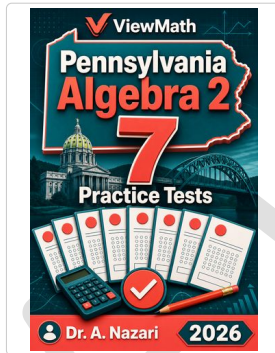
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5 Practice Tests



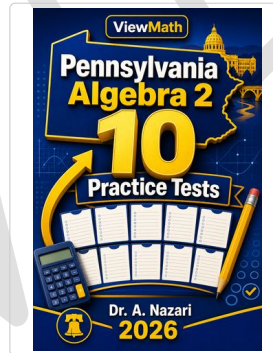
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7 Practice Tests



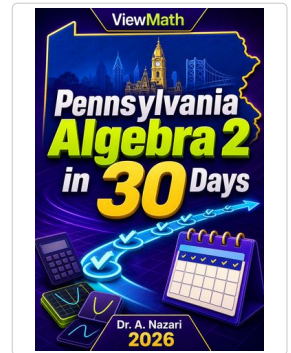
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10 Practice Tests



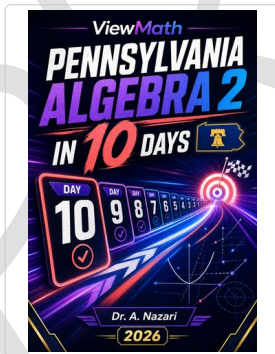
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Math in 30 Days



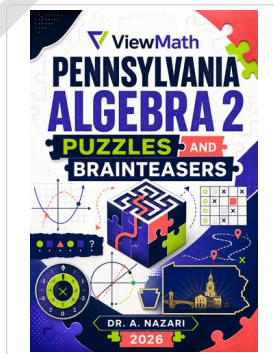
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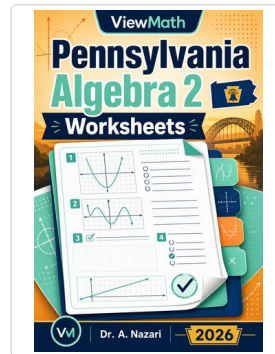
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