Maryland MCAP Grade 9 Math Quizzes

Quick Topic Assessments with Answer Key

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QUICK QUIZZES FOR EVERY TOPIC

Algebra 1 Math Quizzes

Topic Quizzes • Chapter Reviews • Answer Key

Quick, focused quizzes are one of the best ways to find out what you really know — and what you still need to work on.

This book has a short quiz for every Algebra 1 topic. Each one takes about 10–15 minutes and covers the most important skills for that section. Take a quiz, score it, and see exactly where you stand.

Use it after studying a topic, the night before a test, or anytime you want a fast check-in on your algebra skills.

Take the Quiz

10–15 minutes per quiz

Score It

Check every answer in the key

Review & Retry

Study what you missed then quiz again

How to Use This Book

1. ## Pick a topic you've been studying

Look through the table of contents and find the quiz that matches the topic you just covered in class or in your study guide.

2. ## Set a timer for 10–15 minutes

Give yourself a reasonable time limit. Working with a timer helps you build speed and stay focused — just like a real test.

3. ## Answer every question

Try each problem. If you get stuck, skip it and come back at the end. Don't leave any question blank — a good guess is better than no answer.

4. ## Check your answers

Use the answer key in the back. Mark each question right or wrong. Write your score on the quiz page and track your progress over time.

5. ## Review what you missed

Go back to the problems you got wrong. Read the topic explanation, study the method, then try the quiz again in a few days. Your score should improve every time.

Track Your Scores

*Every quiz in this book has a **Name / Date / Score** bar at the top. After you finish a quiz, check your answers using the answer key in the back, then write your score on that bar.*

How to Track Your Progress

1. ***Write your score** on the quiz page right after you grade it.*
2. ***Circle any quiz** where you scored below 70 %.*
3. ***Review the topic**, then retake the quiz in a few days.*
4. ***Compare your scores** — you'll see improvement every time!*

Tip: *Your score should go up every time you retake a quiz. That's how you know you're learning!*

Use the score bar on each quiz page to record your results.

PRACTICE & TRACK

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For Parents, Teachers & Students

*Love what you're reading? ViewMath Academy is your **free online companion** to this book — practice what you learn, track your progress, and master every topic!*

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CHAPTER

1

Foundations of Algebra

What's Inside

1.1 Classifying Real Numbers 2

1.1 Classifying Real Numbers

Learning Goals

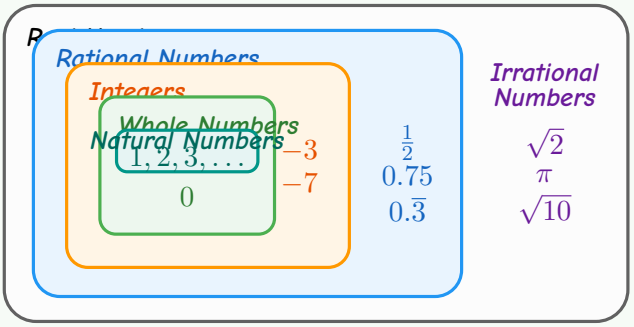
- *Classify numbers as natural, whole, integer, rational, or irrational*
- *Know that rational decimals terminate or repeat*

Number Subsets

Every number you use belongs to at least one of these groups:

- ***Natural numbers:*** $1, 2, 3, \ldots$ *(counting numbers)*
- ***Whole numbers:*** $0, 1, 2, 3, \ldots$ *(naturals plus zero)*
- ***Integers:*** $\ldots, -2, -1, 0, 1, 2, \ldots$ *(whole numbers and negatives)*
- ***Rational numbers:*** *any number that equals* $\frac{a}{b}$ *where* a, b *are integers and* $b \neq 0$
- ***Irrational numbers:*** *decimals that never end and never repeat* ($\sqrt{2}$, π)

These sets nest like rings. Natural $\subset$ *Whole* $\subset$ *Integer* $\subset$ *Rational. Rational and Irrational together make the* ***real numbers****.*



Classifying Numbers

Place each number in all groups that fit.

1. 7 — *Natural, Whole, Integer, Rational* ($\frac{7}{1}$), *Real*
2. 0 — *Whole, Integer, Rational* ($\frac{0}{1}$), *Real*
3. -3 — *Integer, Rational* ($\frac{-3}{1}$), *Real*
4. $\frac{2}{5} = 0.4$ — *Rational (terminates), Real*
5. $\sqrt{3} = 1.7320\ldots$ — *Irrational (never repeats), Real*

> *Every integer is rational! Just write it over 1. For example,* $-5 = \frac{-5}{1}$.

Rational Numbers	Irrational Numbers
• *Written as* $\frac{a}{b}$, $b \neq 0$	• *Cannot be written as* $\frac{a}{b}$
• *Decimals terminate or repeat*	• *Decimals never terminate or repeat*
• *Examples:* $\frac{3}{4}$, -2, $0.\overline{6}$	• *Examples:* $\sqrt{2}$, π, $\sqrt{10}$

Classifying Real Numbers

1. *Classify* -12*: natural, whole, integer, rational, or irrational?*
2. *Is* $\sqrt{25}$ *rational or irrational?*
3. *Is* $\sqrt{7}$ *rational or irrational?*
4. *Write* $0.\overline{3}$ *as a fraction.*
5. *All whole numbers are integers.* **True** ○ **False** ○

CHAPTER

2

Introduction to Functions

What's Inside

2.1 What Is a Function? 5

2.1 What Is a Function?

Learning Goals

- Decide whether a relation is a function
- Use the vertical line test on graphs

What Is a Function?

A **relation** is any set of ordered pairs (x, y).

A **function** is a special relation where every input (x) gives exactly one output (y). No x-value may repeat with a different y-value.

Think of a vending machine. Press button **A3**, you always get the same snack. If one button gave a random item each time, that machine would not be a function!

Ways to show a relation: ordered pairs, table, graph, mapping diagram, or equation.

Checking a Table

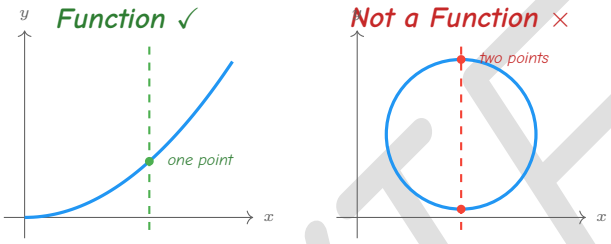
Is this relation a function?

x	1	2	3	1
y	5	8	10	7

The input $x = 1$ maps to both 5 and 7. One input gives two outputs, so this is **not a function**.

The Vertical Line Test

1. Draw or look at the graph of the relation.
2. Imagine sliding a vertical line across the graph from left to right.
3. If the vertical line ever hits the graph in **two or more points** at the same time, it is **not** a function.
4. If every vertical line hits at most one point, it **is** a function.



> A function is like a rule: one question, one answer. If one input gives two answers, it breaks the rule!

TIP

In a mapping diagram, each input arrow must point to exactly one output. An input with two arrows means it is not a function.

What Is a Function?

1. A relation has the pairs $(2, 4)$, $(3, 6)$, $(4, 8)$, $(5, 10)$. Is it a function?
2. A relation has the pairs $(1, 3)$, $(2, 5)$, $(1, 7)$. Is it a function?
3. A circle is drawn on a coordinate plane. Does it pass the vertical line test?
4. Every function is a relation. True ○ False ○
5. A mapping diagram shows $3 \to 9$, $4 \to 16$, $5 \to 25$. Is it a function?

Answer Key & Explanations

Answer Key

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

0 Integer, Rational | 0 Rational | 0 Irrational | 0 $\frac{1}{3}$ | 0 True | 0 Yes

0 No | 0 No | 0 True | 0 Yes

Explanations

0 -12 is negative, so not natural or whole. It is an integer. Since $-12 = \frac{-12}{1}$, it is also rational.

0 $\sqrt{25} = 5$, a whole number. Every integer is rational: $5 = \frac{5}{1}$.

0 7 is not a perfect square. So $\sqrt{7}$ is a non-repeating, non-terminating decimal.

0 $0.\overline{3} = 0.333\ldots$ The repeating decimal equals $\frac{1}{3}$, which is rational.

0 Each input appears only once. Every x-value maps to exactly one y-value, so it is a function.

0 The input $x = 1$ maps to both 3 and 7. One input gives two outputs, so it is not a function.

0 A vertical line through the middle of a circle hits it at two points. So a circle is not a function.

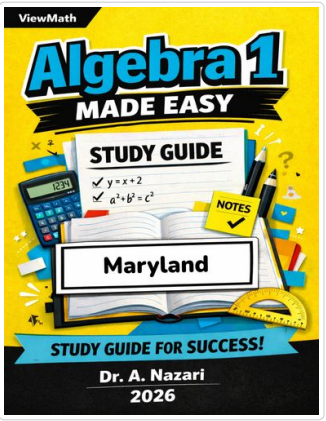
0 Each input maps to exactly one output. No input is repeated, so it is a function.

Well done checking your answers!

Keep practicing to strengthen your skills.

Great Job! Keep Learning with ViewMath!

*Keep up the great work! Visit **viewmath.com/MD-Algebra1** for free lessons, quizzes, and more.*



Study Guide

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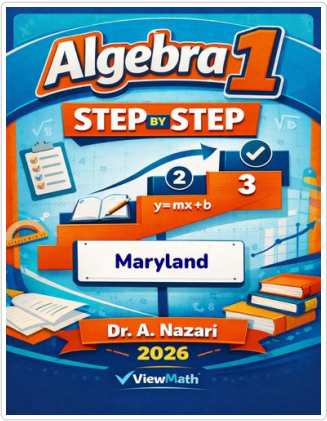

Step-by-Step

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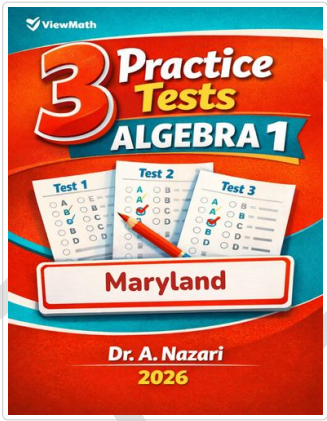

3 Practice Tests

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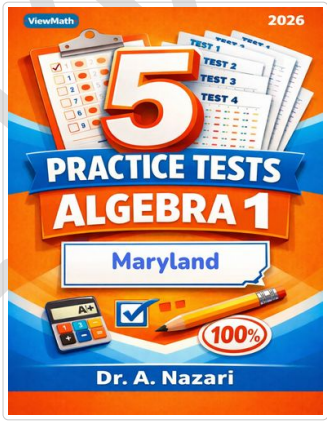

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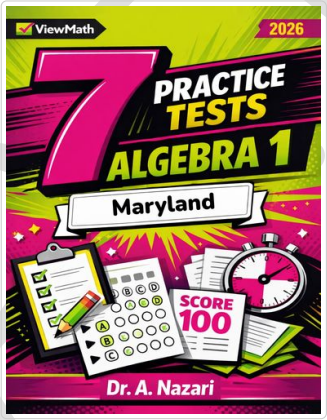

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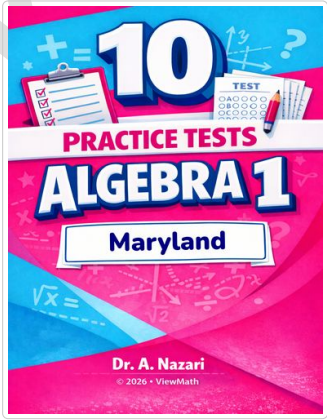

10 Practice Tests

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