Michigan M-STEP Grade 9 Math in 30 Days

Day by Day Study Plan for Test Prep

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YOUR 30-DAY ALGEBRA PLAN

Algebra 1 Math in 30 Days

One Topic a Day • Clear Explanations • Daily Practice

Thirty days. That's all you need to build a solid foundation in Algebra 1 — or review everything before a big test.

Each day covers one focused topic with a clear explanation and practice problems. The schedule is designed so you learn ideas in the right order, with each day building on the one before.

Stick to the plan. One topic a day, 20–30 minutes of focused work. By day 30, you'll have covered every major concept — from real numbers and linear equations to quadratics and data analysis.

Follow the Plan

One topic each day, in order

Do the Practice

Solve every problem and check answers

Track Your Days

Check off each day on the tracker

How to Use This Book

Same routine every day — simple and effective.

1

Read today's topic

Each day starts with a clear explanation of one concept. Read it carefully — don't just skim.

2

Study the example

A worked example shows you how it's done. Cover the solution and try it yourself before looking.

3

Solve the practice problems

Do every problem. Write out your steps. Then check the answers at the back of the book.

4

Mark your progress

Check off the day on the 30-Day Plan. Tomorrow, move to the next topic.

Daily time: About **20–30 minutes**. That's it. Short, focused sessions work better than long, scattered ones.

Missed a day? No problem. Just pick up where you left off. The order matters more than the calendar.

Progress Tracker

Color in each day as you complete it. Watch the grid fill up!

Day 1	Day 2	Day 3	Day 4	Day 5
Day 6	Day 7	Day 8	Day 9	Day 10
Day 11	Day 12	Day 13	Day 14	Day 15
Day 16	Day 17	Day 18	Day 19	Day 20
Day 21	Day 22	Day 23	Day 24	Day 25
Day 26	Day 27	Day 28	Day 29	Day 30

10 — 1/3 done!

20 — Almost there!

30 — Complete!

Every day you complete makes the next one easier. Keep the streak alive!

PRACTICE & TRACK

Take Your Learning Online with ViewMath Academy!

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!*

- ***Topic Quizzes*** *— Test yourself on each topic right after you study it in this book*
- ***Interactive Lessons*** *— Revisit any concept with online lessons that match each chapter*
- ***Progress Tracking*** *— Watch your mastery grow as you work through the book*
- ***Adaptive Practice*** *— Get more questions on topics where you need extra help*
- ***Practice Tests*** *— When you're ready, take a full practice test and analyze your score online*

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Free to use • No downloads required • Works on any device

Classifying Real Numbers

Learning Goals

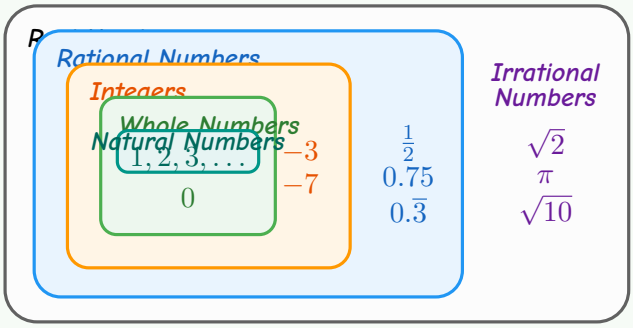
- Classify numbers as natural, whole, integer, rational, or irrational
- Know that rational decimals terminate or repeat

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* ○

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?

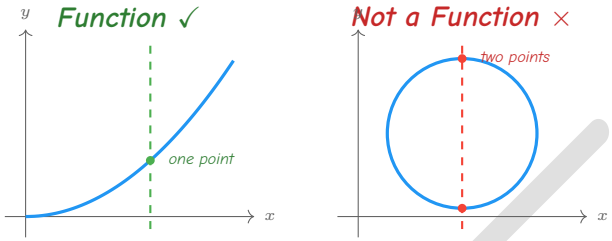
x	1	2	3	1
y	5	8	10	7

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

Try each problem on your own first, then check your work here.

1. Integer, Rational
2. Rational
3. Irrational
4. $\frac{1}{3}$
5. True
1. Yes
2. No
3. No
4. True
5. Yes

Explanations

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

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

3. 7 is not a perfect square. So $\sqrt{7}$ is a non-repeating, non-terminating decimal.

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

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

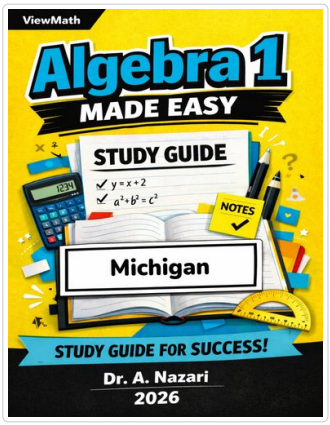
2. The input $x = 1$ maps to both 3 and 7. One input gives two outputs, so it is not a function.

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

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

Great Job! Keep Learning with ViewMath!

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



Study Guide

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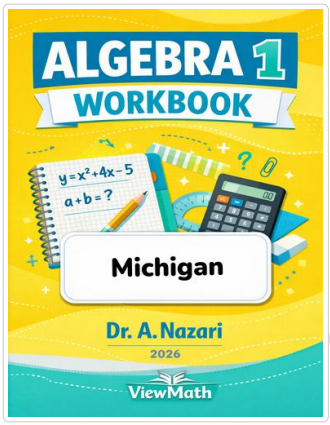
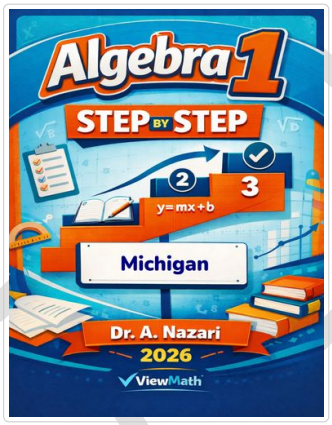


Workbook



Step-by-Step

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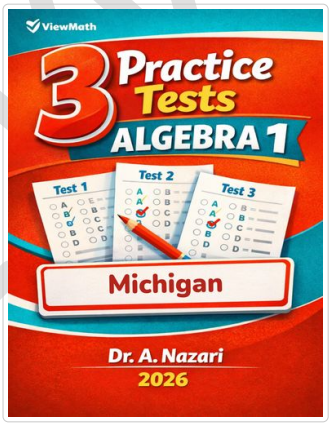

3 Practice Tests

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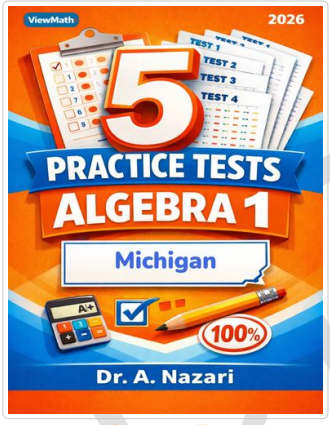

5 Practice Tests

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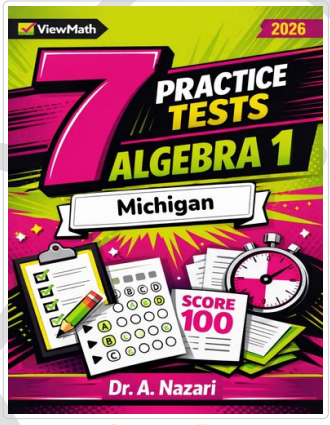

7 Practice Tests

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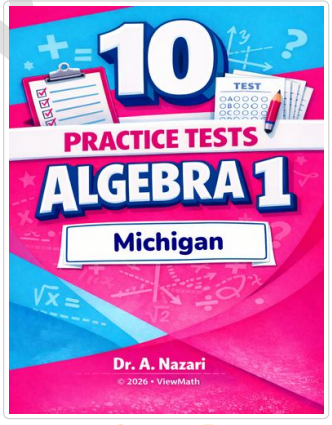

10 Practice Tests

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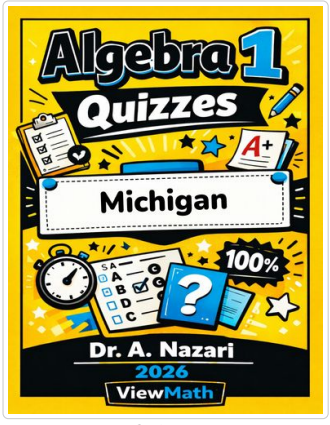

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