

10 North Dakota NDSA Grade 9 Math Practice Tests

The Ultimate Test Prep Collection with Answer Explanations

Dr. A. Nazari

Copyright © 2026 Dr. A. Nazari

Published by View Math Education

ViewMath.com

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the author, except in the case of brief quotations embodied in critical reviews and certain other noncommercial uses permitted by copyright law, including Section 107 or 108 of the 1976 United States Copyright Act.

The information in this book is distributed on an “as is” basis, without warranty. While every precaution has been taken in the preparation of this work, neither the author nor the publisher shall have any liability to any person or entity with respect to any loss or damage caused or alleged to be caused directly or indirectly by the information contained in this book.

Copyright © 2026

10 Practice Tests

🏆 Algebra 1 🏆

10 tests × full coverage

Welcome!

This book contains **10 full-length practice tests** — the most comprehensive preparation you can get for your Algebra 1 assessment. Each test covers all nine chapters:

- 📖 Foundations & Exponents 📖 Linear Equations & Inequalities
- 📖 Functions 📖 Linear Functions & Graphing
- 📖 Systems of Equations 📖 Polynomials & Factoring
- 📖 Quadratic Functions 📖 Exponential Functions
- 📖 Data & Statistics

Ten tests give you the practice needed to walk into the real test feeling fully prepared.

Thorough preparation leads to outstanding results.

4



“ Ten full tests! By the time you finish, there won't be any surprises on test day. ”

1

How to Use This Book

A complete 10-test preparation program

What's Inside

- **10 Full-Length Practice Tests** — each covers all 9 chapters of Algebra 1: foundations & exponents, linear equations & inequalities, functions, linear functions & graphing, systems of equations, polynomials & factoring, quadratics, exponential functions, and data & statistics.
- **Detailed Answer Explanations** — every question includes a step-by-step solution so you learn from every mistake.
- **Formula Reference Sheet** — all the key Algebra 1 formulas you need, organized and ready for quick review.
- **Test Tracker** — log your scores across all 10 tests and monitor your progress from start to finish.

Your 10-Test Training Plan

★ PHASE 1: Foundation (Tests 1–3)

Untimed or soft-timed. Focus on understanding the format, identifying strengths and weaknesses, and building good study habits.

★★ PHASE 2: Building Skills (Tests 4–7)


Timed (120 minutes each). Work on pacing, accuracy, and showing complete solutions. Review weak chapters between tests.


★★★ PHASE 3: Test-Day Ready (Tests 8–10)


Full test conditions: strict timing, quiet space, no notes. Compare scores with your early tests to see your growth.

Schedule: Take one test every 3–4 days, or one per week. Use study days between tests to review.

 **Types of Questions**

 **Multiple Choice:** Four options — work the problem first, then match. Eliminate obviously wrong answers to narrow your choices.

 **Short Answer & Constructed Response:** Show every step: equations, substitutions, simplifications. Partial credit rewards correct reasoning even if the final answer is off.

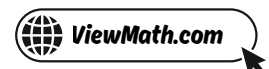
 **Graphing & Data Analysis:** Plot points, draw lines, interpret graphs and data displays. Label axes clearly.



Tip: Ten tests is a full preparation program. Don't rush. The key is what you do between tests — study, review, and understand your mistakes before moving forward.



Find more at
[ViewMath.com/ND-Algebra1](https://www.viewmath.com/ND-Algebra1)



💡 *Test-Taking Tips* 💡

Your complete test-day toolkit

🕒 *Before the Test*

- *Review your notes from the previous test — focus on your weak chapters*
- *Set up a quiet, clean workspace with all your materials ready*
- *Start with a positive mindset: you've prepared for this*

✎ *During the Test*

- *Read each problem fully before calculating anything*
- *Write the equation or set up the expression first, then substitute values*
- *Show all your work — every step, every operation*
- *If stuck for more than 2 minutes, mark it and move on*
- *Use estimation to check if your answers are reasonable*

📖 *After the Test*

- *Read the full explanation for every question you got wrong*
- *Write down which chapters gave you trouble (not just question numbers)*
- *Study those chapters before taking the next test*
- *Record your score in the Test Tracker*

⚠ Common Mistakes in Algebra 1

⚠ Exponents: $x^2 \cdot x^3 = x^5$, but $x^2 + x^3 \neq x^5$. Only add exponents when multiplying.

⚠ Slope formula: $m = \frac{y_2 - y_1}{x_2 - x_1}$ — keep the order consistent.

⚠ Systems of equations: The solution must satisfy both equations.

⚠ Factoring: Always check by multiplying back out: $(x + 3)(x - 2) = x^2 + x - 6$.

⚠ Quadratic formula: Use $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ — the denominator is $2a$, not just 2.



“ The students who improve the most aren't the ones who take the most tests — they're the ones who carefully review every mistake. Make that your priority. ”



Find more at
[ViewMath.com/ND-Algebra1](https://www.viewmath.com/ND-Algebra1)



ViewMath.com



What You'll Need

Gather these materials before you begin

Materials Checklist

- ✓ **Sharpened Pencils** — #2 pencils, at least two
- ✓ **Good Eraser** — for clean corrections
- ✓ **Scratch Paper** — for working out problems
- ✓ **Graphing Calculator** — if allowed by your state test
- ✓ **Ruler / Straightedge** — for graphing lines
- ✓ **Quiet Space** — no distractions
- ✓ **Focused Mind** — ready to do your best

Allowed Materials

- ✓ Pencils and eraser
- ✓ Scratch paper (provided on official test day)
- ✓ Graphing calculator (most Algebra 1 state tests allow calculators — check your state's policy)
- ✓ Ruler or straightedge

Not Allowed

- ✗ Cell phone or any electronic device
- ✗ Notes, textbooks, or reference sheets (unless provided by the test)
- ✗ Help from others during the test
- ✗ Calculator apps or internet access

♥ A Note for Parents & Guardians

Ten tests is a comprehensive program. Plan **one test every 3–4 days** (or one per week) with study sessions between each test.

How to help:

- Tests 1–3 should be untimed — build understanding before adding pressure.
- After each test, review the answer explanations together. Ask: “Which chapters were hardest? Let’s study those before the next one.”
- Use the Test Tracker to celebrate progress over time.
- For chapter-specific help, pair this book with our **Algebra 1 Study Guide** or **Algebra 1 Workbook**.



Find more at
[ViewMath.com/ND-Algebra1](https://www.viewmath.com/ND-Algebra1)



Algebra 1 Reference Sheet

Key formulas and facts you may use during each practice test

★ Properties & Exponents

Commutative: $a + b = b + a$; $ab = ba$

Associative: $(a + b) + c = a + (b + c)$

Distributive: $a(b + c) = ab + ac$

$a^m \cdot a^n = a^{m+n}$ $(a^m)^n = a^{mn}$

$\frac{a^m}{a^n} = a^{m-n}$ $a^0 = 1$

$a^{-n} = \frac{1}{a^n}$ $(ab)^n = a^n b^n$

★ Linear Equations & Inequalities

Slope-intercept: $y = mx + b$

Point-slope: $y - y_1 = m(x - x_1)$

Standard form: $Ax + By = C$

Slope: $m = \frac{y_2 - y_1}{x_2 - x_1}$

Parallel lines: same slope

Perpendicular: $m_1 \cdot m_2 = -1$

★ Functions

A function maps each input to exactly one output.

Vertical line test: passes through at most one point.

Domain: set of all inputs (x -values)

Range: set of all outputs (y -values)

$f(x)$ notation: $f(3)$ means substitute $x = 3$

★ Systems of Equations

Solve by graphing, substitution, or elimination

One solution: lines intersect (consistent)

No solution: lines are parallel

Infinitely many: same line (dependent)

★ Polynomials & Factoring

$(a + b)^2 = a^2 + 2ab + b^2$

$(a - b)^2 = a^2 - 2ab + b^2$

$a^2 - b^2 = (a + b)(a - b)$

To factor $ax^2 + bx + c$: find two numbers that multiply to ac and add to b

★ Quadratic Functions

Standard form: $y = ax^2 + bx + c$

Vertex form: $y = a(x - h)^2 + k$

Vertex: (h, k) ; axis of symmetry: $x = h$

Quadratic formula: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Discriminant: $b^2 - 4ac$

> 0 : two real solutions $= 0$: one < 0 : none

★ Exponential Functions & Sequences

Growth: $y = a \cdot b^x$ where $b > 1$

Decay: $y = a \cdot b^x$ where $0 < b < 1$

Arithmetic sequence: $a_n = a_1 + (n - 1)d$

Geometric sequence: $a_n = a_1 \cdot r^{n-1}$

★ Data & Statistics

Line of best fit: approximates scatter plot trend

Correlation: positive, negative, or none

Correlation \neq causation

Residual = actual - predicted

Good fit: residuals small, randomly scattered

★ Square Roots & Radicals

Perfect squares: 1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144

$\sqrt{ab} = \sqrt{a} \cdot \sqrt{b}$ $\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}$

Simplify: $\sqrt{50} = \sqrt{25 \cdot 2} = 5\sqrt{2}$

My Test Tracker

Record every test and watch your scores improve

Name: _____

Start Date: _____

GETTING STARTED (Tests 1-3)

Test 1 — Untimed

Date: _____ Score: _____ / _____ %: _____ Chapters to review: _____

Test 2 — Untimed

Date: _____ Score: _____ / _____ %: _____ Chapters to review: _____

Test 3 — Soft Timer

Date: _____ Score: _____ / _____ %: _____ Chapters to review: _____

BUILDING SKILLS (Tests 4-7)

Test 4 — Timed (120 min)

Date: _____ Score: _____ / _____ %: _____ Focus area: _____

Test 5 — Timed (120 min)

Date: _____ Score: _____ / _____ %: _____ Focus area: _____

Test 6 — Timed (120 min)

Date: _____ Score: _____ / _____ %: _____ Focus area: _____

Test 7 — Timed (120 min)

Date: _____ Score: _____ / _____ %: _____ Focus area: _____

TEST-DAY READY (Tests 8-10)

Test 8 — Full Test Conditions

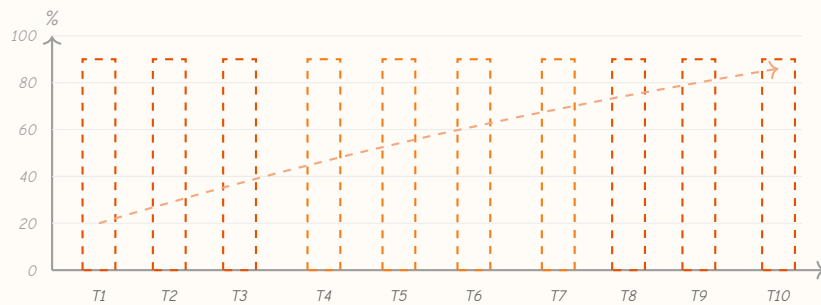
Date: _____ Score: _____ / _____ %: _____ Growth since Test 1: _____

Test 9 — Full Test Conditions

Date: _____ Score: _____ / _____ %: _____ Growth since Test 1: _____

Test 10 — Full Test Conditions

Date: _____ Score: _____ / _____ %: _____ Growth since Test 1: _____

 Score Progress


Shade each bar after every test. Watch your improvement!

 Final Reflection

The most important thing I learned: _____

The topic where I improved the most: _____

My advice for other students: _____



Get Online



Find more at
[ViewMath.com/ND-Algebra1](https://www.viewmath.com/ND-Algebra1)



YOUR ONLINE COMPANION

Continue Learning at ViewMath Academy!

For Parents, Teachers & Students

Great job on the practice tests! Want to keep improving? ViewMath Academy is your **free online companion** to this book.

-  **Score Analyzer** — Enter your answers and instantly see which topics need more practice
-  **Interactive Lessons** — Review the concepts behind each question with clear explanations
-  **Adaptive Quizzes** — Practice your weak topics with questions that match your level
-  **Progress Tracking** — See your mastery grow across all Grade A1 math topics
-  **Personalized Dashboard** — A learning plan tailored just for you



Scan to visit ViewMath Academy

ViewMath.com/ND-Algebra1

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



PRACTICE TEST

1

Practice Test 1

 10 Questions

Before You Start

- ✓ *Read each question carefully before choosing your answer.*
- ✓ *Show your work on scratch paper when you need to.*
- ✓ *Skip hard questions and come back to them later.*
- ✓ *Check your answers when you're done.*
- ✓ *Take your time — there's no rush!*

★ *You've Got This!* ★

Do your best and show what you know!



1. Which expression is equivalent to $(a^2b^3)^{-1}$?

- (A) $-a^2b^3$ (B) $\frac{1}{a^2b^3}$
(C) $a^{-2} + b^{-3}$ (D) $\frac{a^2}{b^3}$

2. What is the quotient of $(2x^2 + 5x - 3) \div (x + 3)$?

- (A) $2x + 1$ (B) $2x - 1$
(C) $2x + 3$ (D) $2x - 3$

3. A graph consists of a single point at $(3, 7)$. Does the graph represent a function?

- (A) No, because a function must have at least two points. (B) Yes, because every input on the graph maps to exactly one output.
(C) No, because the point is not on either axis. (D) Yes, but only if the point is at the origin.



Get Online



Find more at
[ViewMath.com/ND-Algebra1](https://www.viewmath.com/ND-Algebra1)



4. A student has \$30 to spend at a fair. Ride tickets (x) cost \$3 each and game tokens (y) cost \$2 each. The graph below shows the boundary line $3x + 2y = 30$.



Which combination can the student afford?

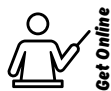
- (A) 8 rides and 4 tokens (B) 6 rides and 5 tokens
(C) 7 rides and 5 tokens (D) 10 rides and 1 token

5. Solve $3(2x - 4) = 18$.

- (A) $x = 11$ (B) $x = 3$
(C) $x = 5$ (D) $x = -5$

6. Which system of equations has no solution?

- (A) $y = x + 5$ and $y = -x + 5$ (B) $y = 3x + 4$ and $y = 3x - 2$
(C) $y = 2x$ and $y = -2x$ (D) $2x + y = 6$ and $4x + 2y = 12$



Get Online



Find more at
ViewMath.com/ND-Algebra1



7. A student's work for simplifying $\sqrt{75}$ is shown below. Which step has an error?

Step	Work
Step 1	$\sqrt{75} = \sqrt{9 \times 8}$
Step 2	$= \sqrt{9} \cdot \sqrt{8}$
Step 3	$= 3\sqrt{8}$

- (A) Step 1
- (B) Step 2
- (C) Step 3
- (D) No error — the work is correct.

8. A student writes $f(x) = 500(0.15)^x$ to model a laptop that loses 15% of its value each year. What is the student's error?

- (A) The initial value should be 0.15.
- (B) The base should be 0.85, not 0.15.
- (C) The function should use addition, not exponents.
- (D) The exponent should be negative.

9. A trend line predicts $y = 45$ at $x = 3$. The actual value at $x = 3$ is 42. What is the residual?

- (A) 87
- (B) 3
- (C) -3
- (D) 45

10. What are the solutions of $x^2 + 2x - 8 = 0$?

- (A) $x = 4$ and $x = -2$
- (B) $x = -4$ and $x = 2$
- (C) $x = 4$ and $x = 2$
- (D) $x = -4$ and $x = -2$



Get Online



Find more at
ViewMath.com/ND-Algebra1



Answer Key & Explanations



Answer Key

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

Practice Test 1 – Answer Key

1 B

2 B

3 B

4 B

5 C

6 B

7 A

8 B

9 C

10 B

Time to Learn!

Review the explanations below, *especially for the questions you missed*.

Understanding why each answer is correct builds stronger problem-solving skills.

Tip: Circle any questions you got wrong, then read their explanation carefully.

Practice Test 1 – Detailed Explanations

1 A negative exponent means reciprocal: $(a^2b^3)^{-1} = \frac{1}{a^2b^3}$. Choice A confuses a negative exponent with a negative sign in front, and choice C incorrectly splits the expression into a sum.

2 Use polynomial long division: $2x^2 \div x = 2x$, and $2x(x+3) = 2x^2 + 6x$. Subtract to get $-x - 3$. Then $-x \div x = -1$, and $-1(x+3) = -x - 3$. Remainder is 0, so the quotient is $2x - 1$.



Get Online



Find more at
[ViewMath.com/ND-Algebra1](https://www.viewmath.com/ND-Algebra1)



- 3 A single-point graph passes the vertical line test because only one vertical line touches the graph, and it touches it at exactly one point. There is one input (3) with one output (7), which satisfies the definition of a function.
- 4 The constraint is $3x + 2y \leq 30$. Test (6, 5): $3(6) + 2(5) = 18 + 10 = 28 \leq 30$ ✓. The other choices give 32, 31, and 32, all exceeding the budget.
- 5 Use the distributive property: $6x - 12 = 18$. Add 12 to both sides: $6x = 30$. Divide by 6: $x = 5$.
- 6 No solution means parallel lines: same slope, different y -intercepts. In choice B, both lines have slope 3 but different intercepts (4 and -2). The other systems have different slopes (A, C) or are the same line (D).
- 7 In Step 1, the factorization is wrong: $9 \times 8 = 72 \neq 75$. The correct factoring is $75 = 25 \times 3$, giving $\sqrt{75} = \sqrt{25} \cdot \sqrt{3} = 5\sqrt{3}$.
- 8 To model 15% annual decay, the decay factor should be $b = 1 - 0.15 = 0.85$. The student mistakenly used 0.15 (the rate) instead of 0.85 (the factor). The correct function is $f(x) = 500(0.85)^x$.
- 9 The residual is calculated as actual minus predicted: $42 - 45 = -3$. A negative residual means the actual value is below the predicted value.
- 10 With $a = 1$, $b = 2$, $c = -8$, the discriminant is $D = 4 + 32 = 36$. Then $x = \frac{-2 \pm 6}{2}$, giving $x = 2$ or $x = -4$.

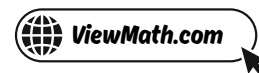


Well done checking your answers!

Keep practicing to strengthen your skills.

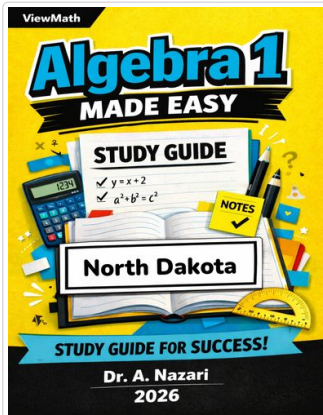


Find more at
[ViewMath.com/ND-Algebra1](https://www.viewmath.com/ND-Algebra1)



 **Great Job! Keep Learning with ViewMath!**

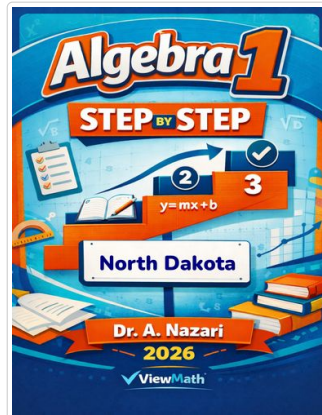
Keep up the great work! Visit viewmath.com/ND-Algebra1 for free lessons, quizzes, and more.



Study Guide



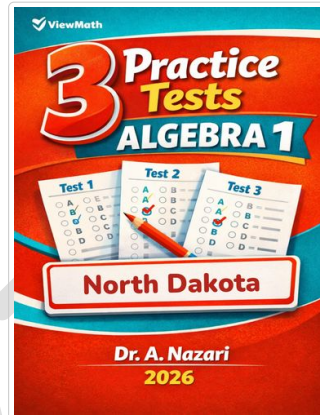
Scan Me



Step-by-Step



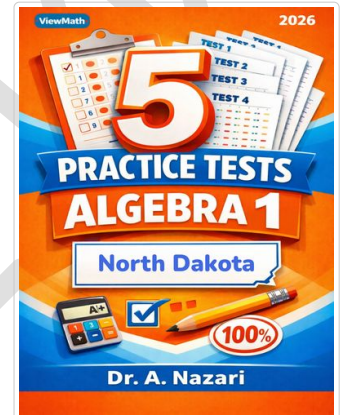
Scan Me



3 Practice Tests



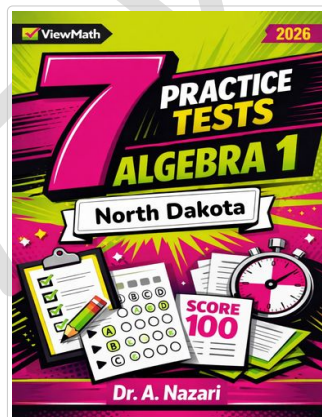
Scan Me



5 Practice Tests



Scan Me



7 Practice Tests



Scan Me



Get Online



Find more at
ViewMath.com/ND-Algebra1



THANK YOU

Enjoyed This Preview?

Get the Full Book!

This preview shows just a small sample of what's inside.

The complete book includes:

- ✓ *All chapters and topics*
- ✓ *Hundreds of practice problems*
- ✓ *Complete answer key with explanations*
- ✓ *Colorful visuals and step-by-step examples*
- ✓ *Reference sheets and progress trackers*

🌐 Visit us at [ViewMath.com](https://www.viewmath.com) for free resources and more books!