

10 Texas STAAR EOC Grade 9 Math Practice Tests

The Ultimate Test Prep Collection with Answer Explanations

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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.



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💡 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. ”



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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**.

PREVIEW



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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

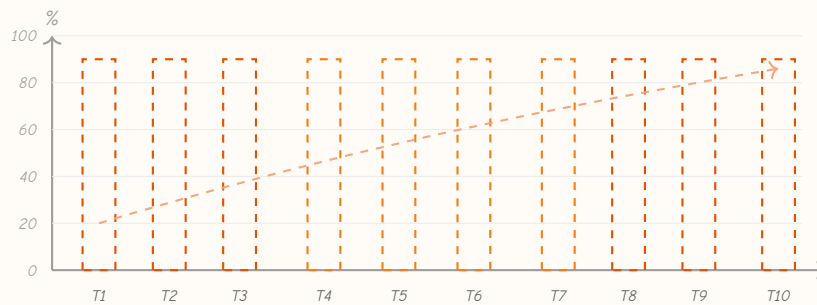
Date: _____ Score: _____ / _____ %: _____ Growth since Test 1: _____

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: _____



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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. The table below shows four expressions. Which expressions have a rational value?

	<i>Expression</i>
<i>I</i>	$\sqrt{3} \times \sqrt{3}$
<i>II</i>	$\sqrt{2} + \sqrt{2}$
<i>III</i>	$\frac{1}{3} + \frac{2}{3}$
<i>IV</i>	$\pi \times \sqrt{2}$

(A) *I* and *III* only

(B) *I*, *II*, and *III*

(C) *III* only

(D) *I* and *II* only

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

(A) $x = 3$

(B) $x = 4$

(C) $x = 6$

(D) $x = 8$

3. If $(x + k)(x + 3) = x^2 + 7x + 12$, what is the value of k ?

Your Answer:



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Answer Key & Explanations



Answer Key

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

Practice Test 1 – Answer Key

1 A

2 C

3 4

4 D

5 4 hours

6 4

7 B

8 B

9 $x < -10$ or $x > 4$

10 A

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 Expression I: $\sqrt{3} \times \sqrt{3} = 3$ (rational). Expression II: $\sqrt{2} + \sqrt{2} = 2\sqrt{2}$ (irrational). Expression III: $\frac{1}{3} + \frac{2}{3} = 1$ (rational). Expression IV: $\pi \times \sqrt{2}$ (irrational). Only I and III are rational.

2 Distribute and simplify each side: $3x - 6 + 4 = 2x + 10 - x$, giving $3x - 2 = x + 10$. Subtract x and add 2: $2x = 12$, so $x = 6$.



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3 Expand $(x + k)(x + 3) = x^2 + 3x + kx + 3k = x^2 + (3 + k)x + 3k$. Matching coefficients: $3 + k = 7$ gives $k = 4$, and $3k = 12$ confirms $k = 4$.

4 The graph approaches the x -axis as $x \rightarrow -\infty$ but never touches it. For any basic exponential function $f(x) = a \cdot b^x$ with $a > 0$, the horizontal asymptote is $y = 0$.

5 Train A's distance: $d = 60t$. Train B's distance: $d = 80(t - 1)$. Set equal: $60t = 80(t - 1)$. Distribute: $60t = 80t - 80$. Solve: $80 = 20t$, so $t = 4$ hours.

6 Input $x = 4$ appears twice with different outputs (9 and 15). One input mapping to two outputs violates the definition of a function.

7 The vertex is the maximum or minimum point. From the table, $f(x)$ increases to 3 at $x = 2$ and then decreases, forming a maximum. The vertex is $(2, 3)$.

8 Check if the slopes are negative reciprocals: $5 \times (-\frac{1}{5}) = -1$. Since the product of the slopes equals -1 , the lines are perpendicular.

9 Split into two cases: $x + 3 > 7$ gives $x > 4$, and $x + 3 < -7$ gives $x < -10$. The solution is $x < -10$ or $x > 4$.

10 Evaluate: $f(3) = -3 + 10 = 7$ and $f(7) = -7 + 10 = 3$. Since $7 > 3$, we have $f(3) > f(7)$.



Well done checking your answers!

Keep practicing to strengthen your skills.



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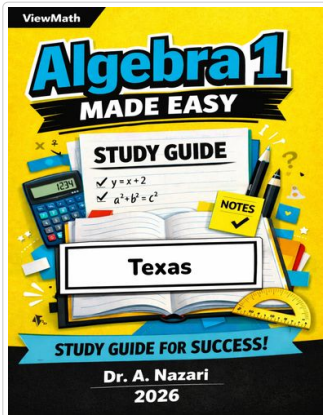


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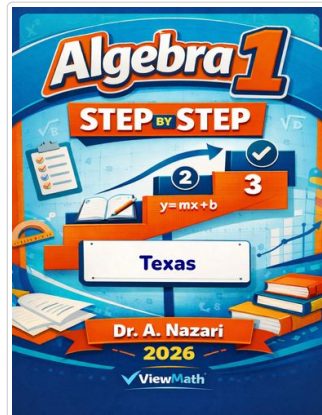
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Study Guide



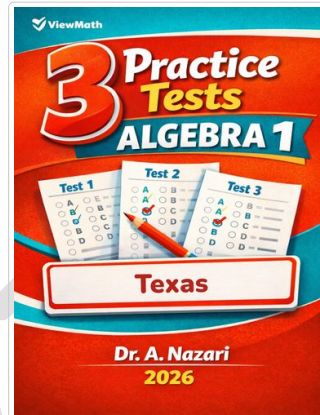
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Step-by-Step



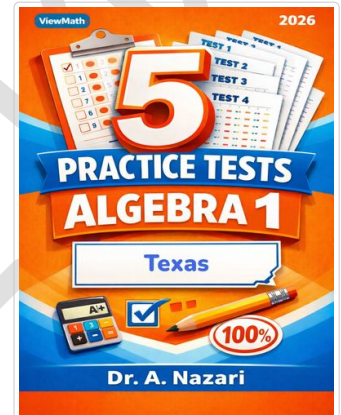
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3 Practice Tests



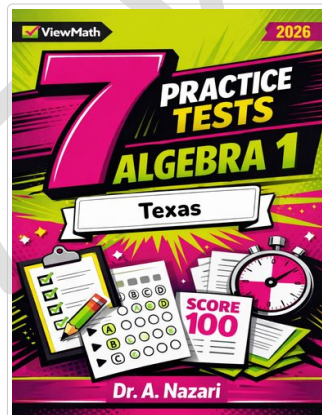
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5 Practice Tests



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7 Practice Tests



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