$y = ax^2 + bx + c$

$(x + 2)^2 = 9$

6 Full-Length MINNESOTA ALGEBRA II PRACTICE TESTS



Clear practice, **student-friendly** explanations, and a **steady path** through **Algebra 2.**

6 FULL-LENGTH TESTS
Realistic practice to build confidence

STUDENT-FRIENDLY EXPLANATIONS
Clear, step-by-step solutions

BUILD SKILLS
Strengthen concepts and problem-solving

A STEADY PATH
Focused practice to help you reach your goal

SIX-TEST ALGEBRA II WORKBOOK

Minnesota Algebra II Practice Tests

Clear practice, student-friendly explanations, and a steady path through Algebra 2.

6

FULL-LENGTH TESTS

ALGEBRA II PRACTICE PATH

- Plan
- Practice
- Review
- Grow



Six complete tests
Full-length sets for pacing and stamina.

Warm explanations
Step-by-step answer support after every test.

Minnesota aligned
Standards references placed before the tests.

Ready to use
Organized for review, tutoring, and independent study.

Practice with purpose. Review with care. Build Algebra II confidence.

Reza Nazari

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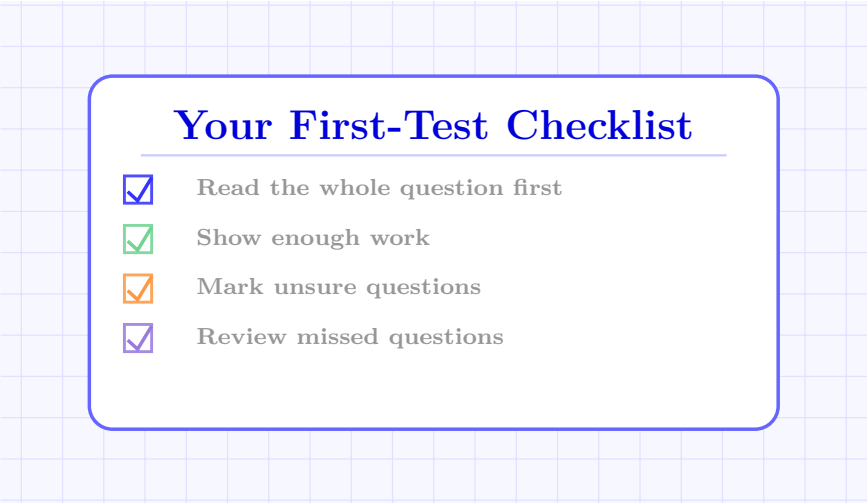
Pacing rule

Make a first pass through the test for questions you can solve cleanly. Mark the heavy ones, then return with the time you protected. Good pacing is not rushing; it is choosing where your attention goes.

Final check before moving on: Did you answer the exact thing asked? Algebra II problems often ask for one feature of a larger situation. Give the requested feature, not extra work.

Before You Begin Test 1

Let the first test be useful, not perfect



You do not need to feel completely ready before you start. The purpose of a practice test is to show you what is already strong and what still needs attention.

As you work, pay attention to your habits. Do you read graphs carefully? Do you check restrictions? Do you keep signs and exponents organized? Do you return to difficult questions with a calmer mind? These habits are part of the score, even though they do not look like formulas.

Six tests give you room to grow. Use the first one to learn where to begin.

Work carefully. Review honestly. Let each test make the next one stronger.

1. FUNCTIONS, TRANSFORMATIONS, AND INVERSES

Composition: $(f \circ g)(x) = f(g(x))$

Inverse relationship: $f(g(x)) = x$ and $g(f(x)) = x$

Vertical shift: $f(x) + k$ moves up/down

Horizontal shift: $f(x - h)$ moves right by h

Average rate of change: $\dfrac{f(b) - f(a)}{b - a}$

Domain: allowed inputs

Range: possible outputs

2. QUADRATICS, POLYNOMIALS, AND COMPLEX NUMBERS

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

Vertex: $x = -\dfrac{b}{2a}$

Discriminant: $b^2 - 4ac$

Remainder theorem: remainder is $f(a)$ after division by $x - a$

Complex numbers: $i^2 = -1$

Conjugates: $(a + bi)(a - bi) = a^2 + b^2$

3. EXPONENTIALS, LOGARITHMS, AND SEQUENCES

Exponential model: $y = ab^x$

Log definition: $\log_b a = c \Leftrightarrow b^c = a$

Change of base: $\log_b a = \dfrac{\log a}{\log b}$

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

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

Finite geometric sum: $S_n = a_1 \dfrac{1 - r^n}{1 - r}$

4. TRIGONOMETRY, CONICS, AND STATISTICS

Identity: $\sin^2\theta + \cos^2\theta = 1$

Law of sines: $\dfrac{a}{\sin A} = \dfrac{b}{\sin B}$

Law of cosines: $c^2 = a^2 + b^2 - 2ab\cos C$

Circle: $(x - h)^2 + (y - k)^2 = r^2$

Mean: $\bar{x} = \dfrac{\sum x_i}{n}$

Standard deviation: spread around the mean

Normal curve: about $68\%, 95\%, 99.7\%$

Scan Me

1) A linear system consists of two lines that have the same slope but *different* y-intercepts. How many solutions does the system have?

☐ A. No solution
☐ B. Exactly one solution
☐ C. Infinitely many solutions
☐ D. Exactly two solutions

2) Which point lies in the solution region of $y > |x - 2|$?

☐ A. $(-1, 0)$
☐ B. $(2, -1)$
☐ C. $(5, 1)$
☐ D. $(2, 3)$

3) Solve the system:

$$y = 2x + 1, \qquad 3x + y = 11.$$

☐ A. $(2, 5)$
☐ B. $(5, 2)$
☐ C. $(1, 3)$
☐ D. $(-2, -3)$

4) Solve $x^2 + 6x - 7 = 0$. List the solutions from least to greatest.

Record your answer in the space provided.

5) Solve for x: $|x - 3| = 8$.

☐ A. $x = 11$
☐ B. $x = 5$ or $x = -11$
☐ C. $x = 11$ or $x = -5$
☐ D. $x = 8$ or $x = -8$

6) What is the end behavior of $h(x) = -x^5 + 4x^2 - 7$?

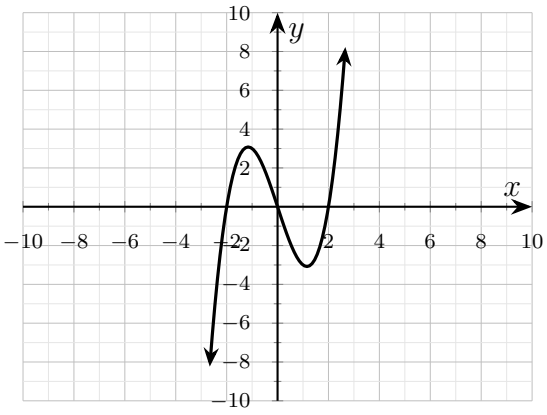
☐ A. $h(x) \to -\infty$ as $x \to \pm\infty$.

☐ B. $h(x) \to -\infty$ as $x \to +\infty$, $h(x) \to +\infty$ as $x \to -\infty$.

☐ C. $h(x) \to +\infty$ as $x \to \pm\infty$.

☐ D. $h(x) \to +\infty$ as $x \to +\infty$, $h(x) \to -\infty$ as $x \to -\infty$.

7) Which polynomial corresponds to the graph shown below?



☐ A. $f(x) = x^3 - x^2 - 4$

☐ B. $f(x) = x^3 - 4x$

☐ C. $f(x) = x^3 + 4x$

☐ D. $f(x) = (x - 2)(x + 2)(x - 1)$

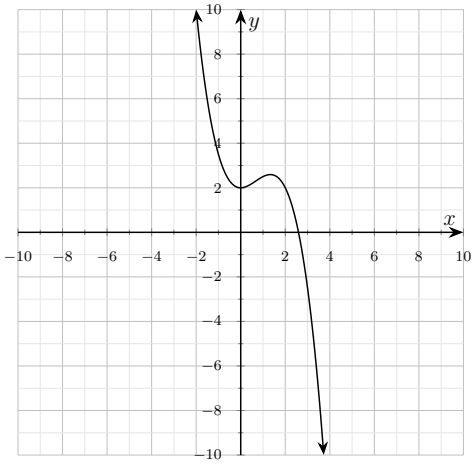
8) Let $z = 5 - 12i$. Find the conjugate $\bar{z}$.

Record your answer in the space provided.

9) If $x = -2$ is a zero of $p(x) = x^3 + kx^2 - 4x - 12$, what is k?

☐ A. 6
☐ B. 1
☐ C. 3
☐ D. -3

10) Identify the degree and sign of the leading coefficient of the polynomial shown in the graph.



☐ A. Even degree, negative leading coefficient
☐ B. Odd degree, positive leading coefficient
☐ C. Even degree, positive leading coefficient
☐ D. Odd degree, negative leading coefficient

11) Which value is a zero of $f(x) = x^3 - 3x^2 + 2$?

☐ A. $x = -1$
☐ B. $x = 0$
☐ C. $x = 1$
☐ D. $x = 2$