

Algebra II Honors Midterm Study Packet Part II

Lesson 131 | Algebra II | Quadratic equations and graphs • Rational expressions and graphs • Logarithms and their properties

<https://www.youtube.com/watch?v=tL1qmMxAM5w>

Related review: exact coverage needs teacher confirmation.

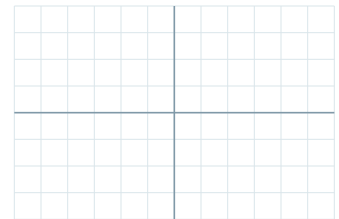
Name: _____ Date: _____ Show your reasoning.

01

Solve $x^2 - 3x - 10 = 0$ by factoring and verify the roots.

02

Analyze and sketch $f(x) = 4/(x - 9) + 13$. Give domain, asymptotes, intercepts, and two points.

**03**

For positive x and y , expand $\log_7(2x^9/y^{10})$.

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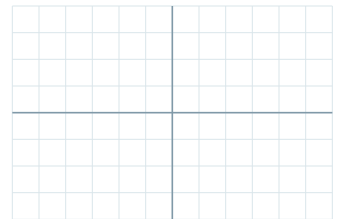
Name: _____ Date: _____ Show your reasoning.

04

Solve $x^2 + 3x - 88 = 0$ by factoring and verify the roots.

05

Analyze and sketch $f(x) = 10/(x - 7) + 3$. Give domain, asymptotes, intercepts, and two points.

**06**

For positive x and y , expand $\log_7(2x^{14}/y^{10})$.

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01

Solve $x^2 - 3x - 10 = 0$ by factoring and verify the roots.

Factor: $(x - 5)(x + 2) = 0$. Roots are 5 and -2. Each root makes one factor zero.

02

Analyze and sketch $f(x) = 4/(x - 9) + 13$. Give domain, asymptotes, intercepts, and two points.

Domain $x \neq 9$; vertical asymptote $x=9$; horizontal asymptote $y=13$. Zero: $x = 113/13$. y-intercept $113/9$. Points (10, 17) and (8, 9).

03

For positive x and y , expand $\log_7(2x^9/y^{10})$.

Use product, quotient, and power rules: $\log_7(2) + 9\log_7(x) - 10\log_7(y)$.

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04

Solve $x^2 + 3x - 88 = 0$ by factoring and verify the roots.

Factor: $(x - 8)(x + 11) = 0$. Roots are 8 and -11. Each root makes one factor zero.

05

Analyze and sketch $f(x) = 10/(x - 7) + 3$. Give domain, asymptotes, intercepts, and two points.

Domain $x \neq 7$; vertical asymptote $x=7$; horizontal asymptote $y=3$. Zero: $x = 11/3$. y-intercept $11/7$. Points (8, 13) and (6, -7).

06

For positive x and y , expand $\log_7(2x^{14}/y^{10})$.

Use product, quotient, and power rules: $\log_7(2) + 14\log_7(x) - 10\log_7(y)$.