

Algebra II Honor Midterm Study Packet Part III

Lesson 132 | Algebra II | Quadratic equations and graphs • Rational expressions and graphs • Logarithms and their properties

<https://www.youtube.com/watch?v=-rNJ6asyHiA>

Related review: exact coverage needs teacher confirmation.

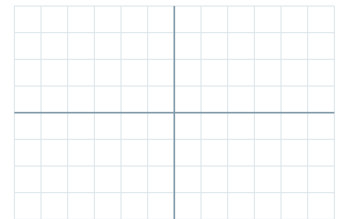
Name: _____ Date: _____ Show your reasoning.

01

Solve $x^2 - 9x - 22 = 0$ by factoring and verify the roots.

02

Analyze and sketch $f(x) = 12/(x - -7) + 10$. Give domain, asymptotes, intercepts, and two points.

**03**

For positive x and y , expand $\log_5(5x^9/y^7)$.

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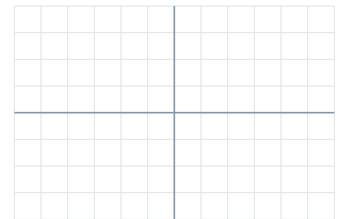
Name: _____ Date: _____ Show your reasoning.

04

Solve $x^2 - 2x - 24 = 0$ by factoring and verify the roots.

05

Analyze and sketch $f(x) = 6/(x - -4) + 4$. Give domain, asymptotes, intercepts, and two points.

**06**

For positive x and y , expand $\log_3(10x^{14}/y^9)$.

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01

Solve $x^2 - 9x - 22 = 0$ by factoring and verify the roots.

Factor: $(x - 11)(x + 2) = 0$. Roots are 11 and -2. Each root makes one factor zero.

02

Analyze and sketch $f(x) = 12/(x - -7) + 10$. Give domain, asymptotes, intercepts, and two points.

Domain $x \neq -7$; vertical asymptote $x = -7$; horizontal asymptote $y = 10$. Zero: $x = -41/5$. y-intercept $82/7$. Points $(-6, 22)$ and $(-8, -2)$.

03

For positive x and y , expand $\log_5(5x^9/y^7)$.

Use product, quotient, and power rules: $\log_5(5) + 9\log_5(x) - 7\log_5(y)$.

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04

Solve $x^2 - 2x - 24 = 0$ by factoring and verify the roots.

Factor: $(x - 6)(x + 4) = 0$. Roots are 6 and -4. Each root makes one factor zero.

05

Analyze and sketch $f(x) = 6/(x - 4) + 4$. Give domain, asymptotes, intercepts, and two points.

Domain $x \neq 4$; vertical asymptote $x=4$; horizontal asymptote $y=4$. Zero: $x = -11/2$. y-intercept $11/2$. Points $(-3, 10)$ and $(-5, -2)$.

06

For positive x and y , expand $\log_3(10x^{14}/y^9)$.

Use product, quotient, and power rules: $\log_3(10) + 14\log_3(x) - 9\log_3(y)$.