

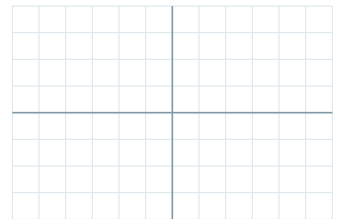
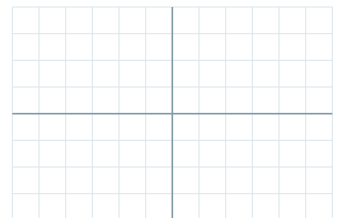
Algebra II Trigonometry Honors Big Idea Chapter 7 Rational Functions Part III

Lesson 119 | Algebra II | Rational expressions and graphs

<https://www.youtube.com/watch?v=hjTk-8Zx5oI>

Related review: exact coverage needs teacher confirmation.

Name: _____ Date: _____ Show your reasoning.

01Simplify $(x^2 + 5x - 66)/(x - 6)$ and identify the excluded input and hole.**02**Analyze and sketch $f(x) = 13/(x - 3) + 6$. Give domain, asymptotes, intercepts, and two points.**03**Analyze and sketch $f(x) = 12/(x - 7) + 14$. Give domain, asymptotes, intercepts, and two points.

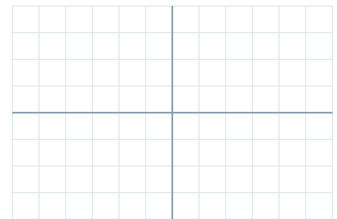
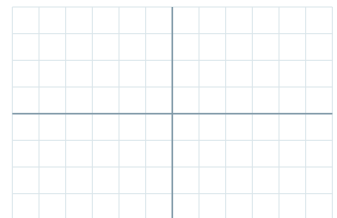
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04Simplify $(x^2 + 3x - 10)/(x - 2)$ and identify the excluded input and hole.**05**Analyze and sketch $f(x) = 10/(x - 5) + 9$. Give domain, asymptotes, intercepts, and two points.**06**Analyze and sketch $f(x) = 11/(x - -8) + 2$. Give domain, asymptotes, intercepts, and two points.

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01

Simplify $(x^2 + 5x - 66)/(x - 6)$ and identify the excluded input and hole.

Factor the numerator as $(x-6)(x+11)$. Cancel for $x \neq 6$; simplified rule $x+11$. The original domain excludes 6; the hole is $(6, 17)$.

02

Analyze and sketch $f(x) = 13/(x - 3) + 6$. Give domain, asymptotes, intercepts, and two points.

Domain $x \neq 3$; vertical asymptote $x=3$; horizontal asymptote $y=6$. Zero: $x = 5/6$. y-intercept $5/3$. Points $(4, 19)$ and $(2, -7)$.

03

Analyze and sketch $f(x) = 12/(x - 7) + 14$. Give domain, asymptotes, intercepts, and two points.

Domain $x \neq 7$; vertical asymptote $x=7$; horizontal asymptote $y=14$. Zero: $x = 43/7$. y-intercept $86/7$. Points $(8, 26)$ and $(6, 2)$.

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04

Simplify $(x^2 + 3x - 10)/(x - 2)$ and identify the excluded input and hole.

Factor the numerator as $(x-2)(x+5)$. Cancel for $x \neq 2$; simplified rule $x+5$. The original domain excludes 2; the hole is (2, 7).

05

Analyze and sketch $f(x) = 10/(x - 5) + 9$. Give domain, asymptotes, intercepts, and two points.

Domain $x \neq 5$; vertical asymptote $x=5$; horizontal asymptote $y=9$. Zero: $x = 35/9$. y-intercept 7. Points (6, 19) and (4, -1).

06

Analyze and sketch $f(x) = 11/(x - -8) + 2$. Give domain, asymptotes, intercepts, and two points.

Domain $x \neq -8$; vertical asymptote $x=-8$; horizontal asymptote $y=2$. Zero: $x = -27/2$. y-intercept $27/8$. Points (-7, 13) and (-9, -9).