

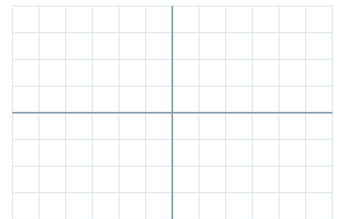
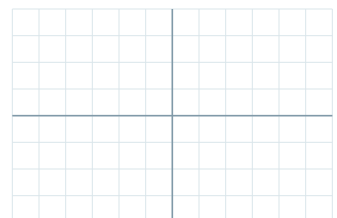
Algebra II Trigonometry Honors Big Idea Chapter 7 Rational Functions Part II

Lesson 118 | Algebra II | Rational expressions and graphs

<https://www.youtube.com/watch?v=cGv14CP7Xtc>

Related review: exact coverage needs teacher confirmation.

Name: _____ Date: _____ Show your reasoning.

01Simplify $(x^2 - 3x - 154)/(x - 14)$ and identify the excluded input and hole.**02**Analyze and sketch $f(x) = 7/(x - 2) + 3$. Give domain, asymptotes, intercepts, and two points.**03**Analyze and sketch $f(x) = 6/(x - 1) + 12$. Give domain, asymptotes, intercepts, and two points.

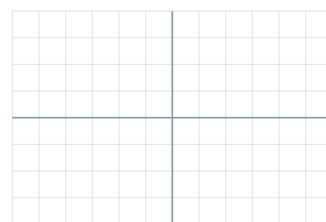
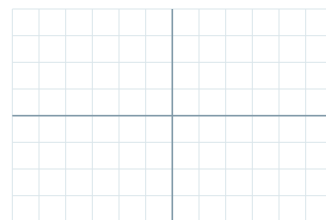
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04Simplify $(x^2 + 12x - 28)/(x - 2)$ and identify the excluded input and hole.**05**Analyze and sketch $f(x) = 13/(x - -8) + 7$. Give domain, asymptotes, intercepts, and two points.**06**Analyze and sketch $f(x) = 6/(x - 4) + 9$. Give domain, asymptotes, intercepts, and two points.

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01

Simplify $(x^2 - 3x - 154)/(x - 14)$ and identify the excluded input and hole.

Factor the numerator as $(x-14)(x+11)$. Cancel for $x \neq 14$; simplified rule $x+11$. The original domain excludes 14; the hole is (14, 25).

02

Analyze and sketch $f(x) = 7/(x - 2) + 3$. Give domain, asymptotes, intercepts, and two points.

Domain $x \neq 2$; vertical asymptote $x=2$; horizontal asymptote $y=3$. Zero: $x = -13/3$. y-intercept $13/2$. Points $(-1, 10)$ and $(-3, -4)$.

03

Analyze and sketch $f(x) = 6/(x - 1) + 12$. Give domain, asymptotes, intercepts, and two points.

Domain $x \neq 1$; vertical asymptote $x=1$; horizontal asymptote $y=12$. Zero: $x = 1/2$. y-intercept 6. Points $(2, 18)$ and $(0, 6)$.

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04

Simplify $(x^2 + 12x - 28)/(x - 2)$ and identify the excluded input and hole.

Factor the numerator as $(x-2)(x+14)$. Cancel for $x \neq 2$; simplified rule $x+14$. The original domain excludes 2; the hole is $(2, 16)$.

05

Analyze and sketch $f(x) = 13/(x - -8) + 7$. Give domain, asymptotes, intercepts, and two points.

Domain $x \neq -8$; vertical asymptote $x=-8$; horizontal asymptote $y=7$. Zero: $x = -69/7$. y-intercept $69/8$. Points $(-7, 20)$ and $(-9, -6)$.

06

Analyze and sketch $f(x) = 6/(x - 4) + 9$. Give domain, asymptotes, intercepts, and two points.

Domain $x \neq 4$; vertical asymptote $x=4$; horizontal asymptote $y=9$. Zero: $x = 10/3$. y-intercept $15/2$. Points $(5, 15)$ and $(3, 3)$.