

Algebra II Honors Chapter 7 Rational Functions Sample Test Questions

Lesson 120 | Algebra II | Rational expressions and graphs

<https://www.youtube.com/watch?v=PYWAt87RtUk>

Original practice aligned to the saved video title.

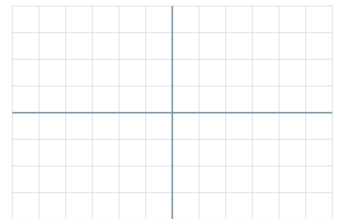
Name: _____ Date: _____ Show your reasoning.

01

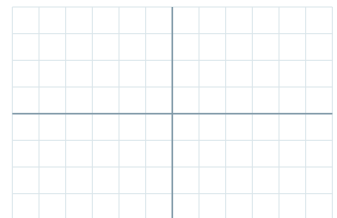
Simplify $(x^2 + 4x - 60)/(x - 6)$ and identify the excluded input and hole.

02

Analyze and sketch $f(x) = 2/(x - 8) + 9$. Give domain, asymptotes, intercepts, and two points.

**03**

Analyze and sketch $f(x) = 12/(x - 2) + 10$. Give domain, asymptotes, intercepts, and two points.



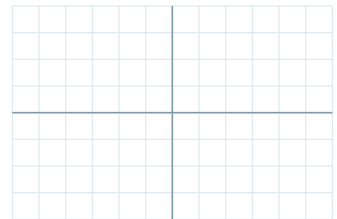
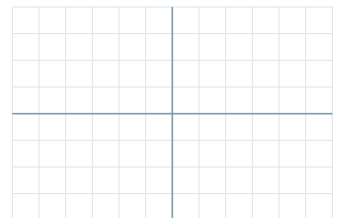
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04Simplify $(x^2 + 7x - 60)/(x - 5)$ and identify the excluded input and hole.**05**Analyze and sketch $f(x) = 13/(x - -2) + 6$. Give domain, asymptotes, intercepts, and two points.**06**Analyze and sketch $f(x) = 14/(x - -6) + 8$. Give domain, asymptotes, intercepts, and two points.

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01

Simplify $(x^2 + 4x - 60)/(x - 6)$ and identify the excluded input and hole.

Factor the numerator as $(x-6)(x+10)$. Cancel for $x \neq 6$; simplified rule $x+10$. The original domain excludes 6; the hole is (6, 16).

02

Analyze and sketch $f(x) = 2/(x - 8) + 9$. Give domain, asymptotes, intercepts, and two points.

Domain $x \neq 8$; vertical asymptote $x=8$; horizontal asymptote $y=9$. Zero: $x = 70/9$. y-intercept $35/4$. Points (9, 11) and (7, 7).

03

Analyze and sketch $f(x) = 12/(x - 2) + 10$. Give domain, asymptotes, intercepts, and two points.

Domain $x \neq 2$; vertical asymptote $x=2$; horizontal asymptote $y=10$. Zero: $x = 4/5$. y-intercept 4. Points (3, 22) and (1, -2).

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04

Simplify $(x^2 + 7x - 60)/(x - 5)$ and identify the excluded input and hole.

Factor the numerator as $(x-5)(x+12)$. Cancel for $x \neq 5$; simplified rule $x+12$. The original domain excludes 5; the hole is (5, 17).

05

Analyze and sketch $f(x) = 13/(x - -2) + 6$. Give domain, asymptotes, intercepts, and two points.

Domain $x \neq -2$; vertical asymptote $x=-2$; horizontal asymptote $y=6$. Zero: $x = -25/6$. y-intercept $25/2$. Points $(-1, 19)$ and $(-3, -7)$.

06

Analyze and sketch $f(x) = 14/(x - -6) + 8$. Give domain, asymptotes, intercepts, and two points.

Domain $x \neq -6$; vertical asymptote $x=-6$; horizontal asymptote $y=8$. Zero: $x = -31/4$. y-intercept $31/3$. Points $(-5, 22)$ and $(-7, -6)$.