

1. Does $f(x) = \frac{x^3 - 2x^2 + 3}{x^2 - 1}$ have a slant asymptote? Where? _____

2. Write a rational function with Vertical Asymptotes at $x = 2$ and $x = -3$ and a horizontal asymptote at $y = 0$ and an x-intercept at $(4, 0)$ _____

3. What is the coordinates of the hole for the function $f(x) = \frac{x^2 - 4}{x^2 + 2x - 8}$ _____

4. What are the x-int, y-int, vertical asymptotes and horizontal asymptote for $g(x) = \frac{(x-3)(x+2)}{(x+2)(x+1)}$?

x-int: _____ y-int: _____
 VA: _____ HA: _____

5. What is the slant asymptote for $g(x) = \frac{x^2 - 9x + 20}{x + 4}$? _____

6. Use problem #5 to find its x-intercepts and y-intercepts x-int: _____ y-int: _____

7. $f(x) = \frac{x + 4}{x^2 - x - 20}$

Domain: _____

Range: _____

Vertical Asymptote: _____

Horizontal Asymptote: _____

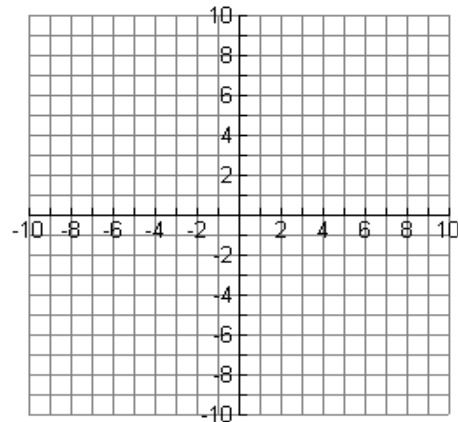
Slant Asymptote: _____

Holes: _____

x-int: _____ y-int: _____

INC: _____

DEC: _____



8. $f(x) = \frac{2x-5}{x+4}$

Domain: _____

Range: _____

Vertical Asymptote: _____

Horizontal Asymptote: _____

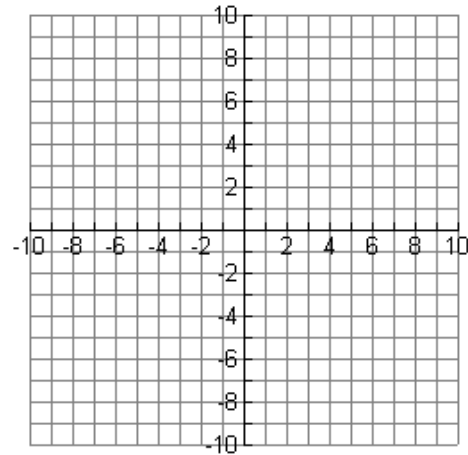
Slant Asymptote: _____

Holes: _____

x-int: _____ y-int: _____

INC: _____

DEC: _____



9. Write a rational function that has a Vertical Asymptote at $x = -3$ and Horizontal Asymptote at $y = 4$.

10. Write a rational function that has Vertical Asymptotes at $x = 1$ and $x = 2$ and a Horizontal Asymptote at $y = 2$.

11. Find all the Asymptotes of $g(x) = \frac{x^2 + 4x - 5}{x + 1}$

VA: _____

HA: _____

Slant: _____

12. Did #11 have any holes?
 If so, where is the hole?



Rational Functions

Name _____

Date _____ Day _____

13. Find all the Asymptotes of $h(x) = \frac{2x^2 + 4x}{x^2 + 5x + 6}$

VA: _____

HA: _____

Slant: _____

14. Did #13 have any holes?
If so, where is the hole?

15. What is the x-intercept and y-intercept for $h(x) = \frac{2x - 9}{(x + 3)(x - 1)}$

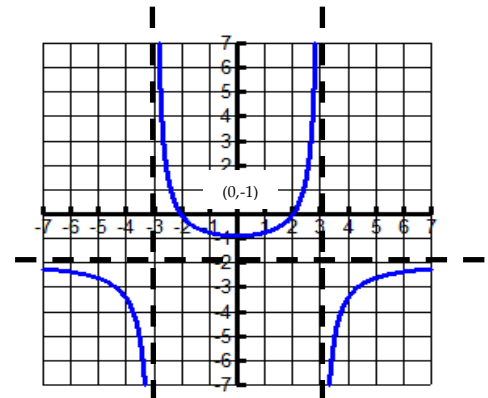
x-int: _____

y-int: _____

16. Find **horizontal** and **vertical** asymptotes and intercepts of the rational function.

HA: _____ VA: _____

X-int: _____ Y-int: _____



17. Given $g(x) = \frac{x^2 - 9}{3x^2 + 9x}$, A. explain what is occurring at $x = -3$? B. What are the asymptotes?

A) _____

B) VA _____ HA _____ Slant _____

