

Name: _____

Date: _____

Find the vertical & horizontal asymptotes, x & y ints, holes, and domain & range. Graph when appropriate:

1. $f(x) = \frac{1}{x-2}$

Vert: _____ Hor: _____

x-Int.: _____ y-int: _____

holes: _____

Domain: _____ Range: _____

2. $f(x) = \frac{x^2 - x - 12}{x}$

Vert: _____ Hor: _____

x-Int.: _____ y-int: _____

holes: _____

Domain: _____ Range: _____

3. $f(x) = \frac{x^2 - 5x + 6}{x^2 - 4x + 3}$

Vert: _____ Hor: _____

x-Int.: _____ y-int: _____

holes: _____

Domain: _____ Range: _____

4. $f(x) = \frac{x^2 + x}{x+1}$

Vert: _____ Hor: _____

x-Int.: _____ y-int: _____

holes: _____

Domain: _____ Range: _____

5. $f(x) = \frac{2x^2 - 4x}{x^2 - 2x - 3}$

Vert: _____ Hor: _____

x-Int.: _____ y-int: _____

holes: _____

Domain: _____ Range: _____

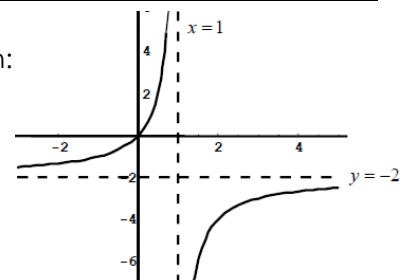
Write a rational function with the following characteristics:

6. vertical asymptotes of $x = 1, x = -2$.

7. vertical asymptote of $x = -1$, a horizontal asymptote of $y = 2$ and a zero at $x = 3$.

8. vertical asymptotes of $x = 0, x = \frac{5}{2}$ and horizontal asymptote of $y = 2$.

9. Using the graph:



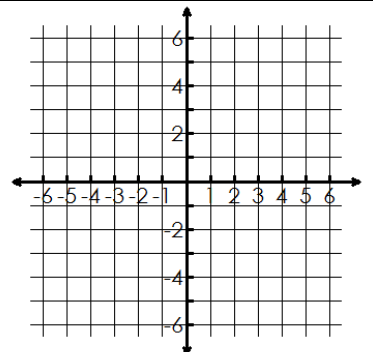
10. $f(x) = \frac{x^3 + 3x^2}{x^3 + 3x^2 - 4x - 12}$

Vert: _____ Hor: _____

x-Int.: _____ y-int: _____

holes: _____

Domain: _____ Range: _____



11. $f(x) = \frac{5}{x+3}$

Vert: _____ Hor: _____

x-Int.: _____ y-int: _____

holes: _____

Domain: _____ Range: _____

12. $f(x) = \frac{3x-6}{x^2+x-6}$

Vert: _____ Hor: _____

x-Int.: _____ y-int: _____

holes: _____

Domain: _____ Range: _____

13. $f(x) = \frac{x^3}{x^2-1}$

Vert: _____ Hor: _____

x-Int.: _____ y-int: _____

holes: _____

Domain: _____ Range: _____

14. $f(x) = \frac{x^3+x^2-12x}{4x^2-12x}$

Vert: _____ Hor: _____

x-Int.: _____ y-int: _____

holes: _____

Domain: _____ Range: _____

15. $f(x) = \frac{x^2-2x-3}{x-2}$

Vert: _____ Hor: _____

x-Int.: _____ y-int: _____

holes: _____

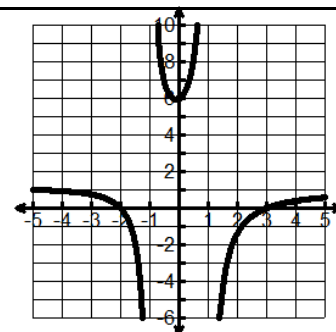
Domain: _____ Range: _____

Write a rational function with the following characteristics:

16. Vertical asymptotes of $x = 0$ and $x = \frac{4}{3}$
and horizontal asymptote of $y = -2$

17. No vertical asymptotes and a y-intercept of $(0,5)$

18. Using the graph:



19. $f(x) = \frac{x+4}{x^2+3x-4}$

Vert: _____ Hor: _____

x-Int.: _____ y-int: _____

holes: _____

Domain: _____ Range: _____

