

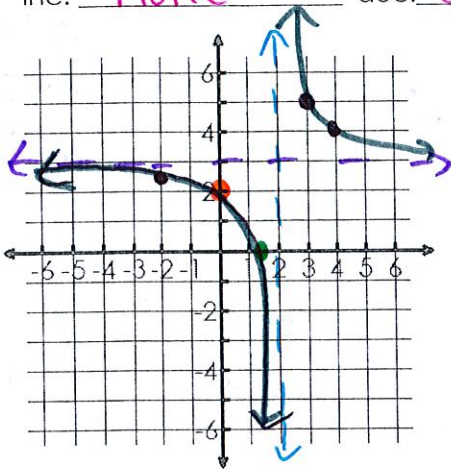
1. $f(x) = \frac{3x-4}{x-2}$

VA: $x=2$ HA: $y=3$ Slant:

x-int: $(\frac{4}{3}, 0)$ y-int: $(0, 2)$ Holes:

Domain: $(-\infty, 2)(2, \infty)$ Range: $(-\infty, 3)(3, \infty)$

inc: none dec: $(-\infty, 2)(2, \infty)$



x	y
-2	2.5
3	5
4	4

Pick some points to graph

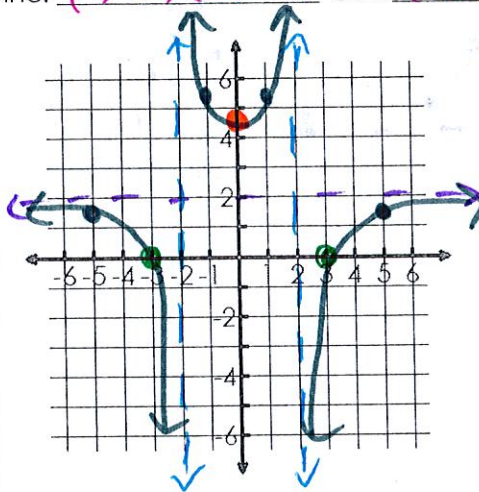
2. $f(x) = \frac{2x^2-18}{x^2-4} = \frac{2(x+3)(x-3)}{(x+2)(x-2)}$

VA: $x=2, -2$ HA: $y=2$ Slant:

x-int: $(-3, 0)(3, 0)$ y-int: $(0, \frac{9}{2})$ Holes:

Domain: $(-\infty, -2)(-2, 2)(2, \infty)$ Range: $(-\infty, 2)(\frac{9}{2}, \infty)$

inc: $(0, 2)(2, \infty)$ dec: $(-\infty, -2)(-2, 0)$



x	y
-5	1.5
-1	5.3
1	5.3
5	1.5

pick some in each section

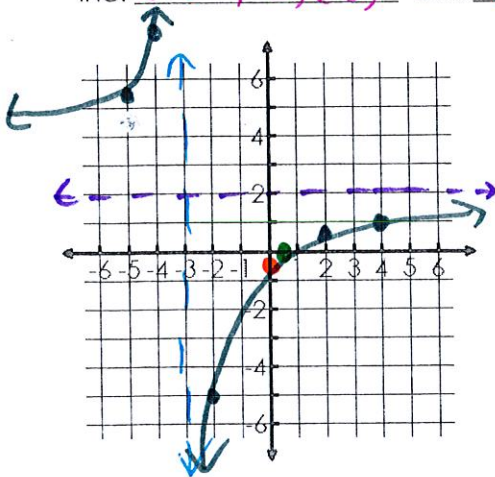
3. $f(x) = \frac{2x-1}{x+3}$

VA: $x=-3$ HA: $y=2$ Slant:

x-int: $(\frac{1}{2}, 0)$ y-int: $(0, -\frac{1}{3})$ Holes:

Domain: $(-\infty, -3)(-3, \infty)$ Range: $(-\infty, 2)(2, \infty)$

inc: $(-\infty, -3)(-3, \infty)$ dec: n/a



x	y
-5	5.5
-4	9
-2	5
2	.6
4	1

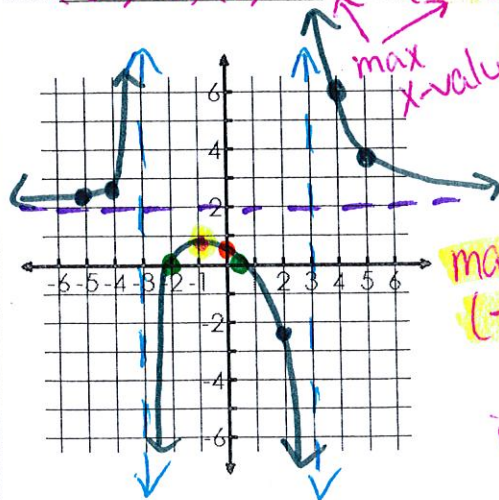
4. $f(x) = \frac{2x^2+3x-2}{x^2-9} = \frac{(2x-1)(x+2)}{(x+3)(x-3)}$

VA: $x=3, -3$ HA: $y=2$ Slant:

x-int: $(\frac{1}{2}, 0)(-2, 0)$ y-int: $(0, \frac{2}{9})$ Holes:

Domain: $(-\infty, -3)(-3, 3)(3, \infty)$ Range: $(-\infty, 3)(2, \infty)$

inc: $(-\infty, -3)(3, -\frac{97}{9})$ dec: $(-\frac{97}{9}, 3)(3, \infty)$



x	y
-5	2.1
-4	2.5
-2	-2.4
4	6
5	3.9

max @ $(-\frac{97}{9}, 3)$
in calc!

max y-value

$$y = \frac{x+2}{x-1} \quad \frac{1+2}{1-1} = \text{none}$$

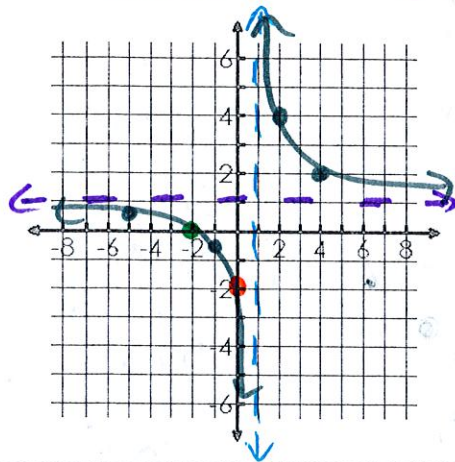
$$5. f(x) = \frac{x^2 + x - 2}{x^2 - 2x + 1} = \frac{(x+2)(x-1)}{(x-1)(x-1)} = \frac{x+2}{x-1}$$

VA: $x=1$ HA: $y=1$ Slant: $y=x-2$

x-int: $(-2, 0)$ y-int: $(0, -2)$ Holes: $(1, \text{none})$

Domain: $(-\infty, 1) \cup (1, \infty)$ Range: $(-\infty, 1) \cup (1, \infty)$

inc: none dec: $(-\infty, 1) \cup (1, \infty)$



x	y
-5	.5
2	4
4	2

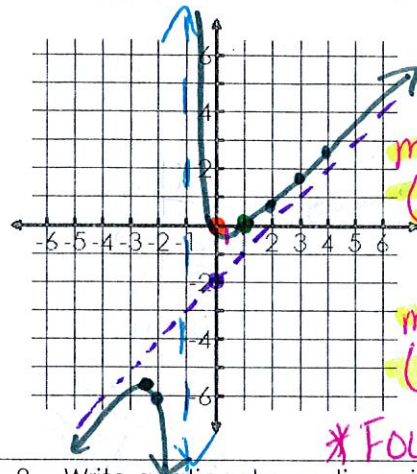
$$6. f(x) = \frac{x^2 - x}{x+1} \quad \frac{x(x-1)}{x+1} \quad \begin{array}{r} -1 \ 1 \ -1 \ 0 \\ \downarrow \downarrow \downarrow \\ 1 \ -2 \end{array}$$

VA: $x=-1$ HA: none Slant: $y=x-2$

x-int: $(0, 0) \cup (1, 0)$ y-int: $(0, 0)$ Holes: none

Domain: $(-\infty, -1) \cup (-1, \infty)$ Range: $(-\infty, -5.83) \cup (-.17, \infty)$

inc: $(-\infty, -2.41) \cup (.41, \infty)$ dec: $(-2.41, -1) \cup (-1, .41)$



x	y
-2	-6
2	2/3
3	1.5
4	2.4

7. Write a rational equation with vertical asymptotes of $x=1, x=-2$.

8. Write a rational equation with no vertical asymptotes and a horizontal asymptote of $y=0$.

9. Write a rational equation with vertical asymptotes of $x=0, x=\frac{5}{2}$ and horizontal asymptote of $y=2$.

10. Write a rational equation with vertical asymptote of $x=-1$, a horizontal asymptote of $y=2$ and a zero at $x=3$.

11. Write an equation for graph.

