Wednesday, May 15, 2019
7:05 PM

PreCalc **Review: Section 2.6** Name KEY

For problems #1 - 4: (a) state the domain; (b) identify all intercepts; (c) Find any asymptotes (horizontal, vertical, or slant); (d) identify any holes; (e) sketch the graph (plotting additional points as needed)

1. $g(x)=\frac{2+x}{1-x}$ $x\neq 1$

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

b) x-intercept: $(-2,0)$ $2+x=0$ $x=-2$

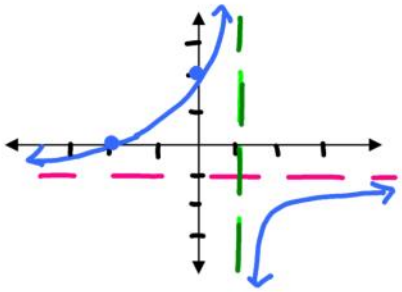
y-intercept: $(0,2)$ $\frac{2+0}{1-0}=\frac{2}{1}=2$

c) VA: $x=1$

* HA: $y=-1$ $n=m$ ratio of L.C.

SA: none

d) Holes: none



2. $y=\frac{2x^2}{x^2-4}=\frac{2x^2}{(x+2)(x-2)}$ $x\neq -2$ $x\neq 2$

a) Domain: $(-\infty,-2)\cup(-2,2)\cup(2,\infty)$

b) x-intercept: $(0,0)$ $2x^2=0$ $x^2=0$ $x=0$

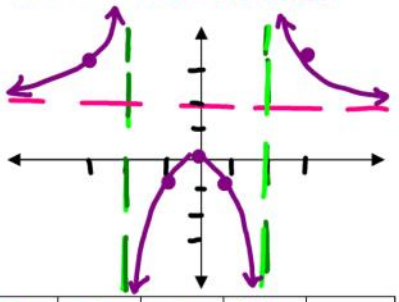
y-intercept: $(0,0)$ $\frac{2(0)^2}{(0)^2-4}=\frac{0}{-4}=0$

c) VA: $x=-2, x=2$

HA: $y=2$ $n=m$ ratio of L.C.

SA: none

d) Holes: none



x	-3	-1	1	3	
y	3.6	-.7	-.7	3.6	

3. $f(x)=\frac{6x^2-11x+3}{3x^2-x}=\frac{(2x-3)(3x-1)}{x(3x-1)}=\frac{2x-3}{x}$ $x\neq 0$ $x\neq\frac{1}{3}$

a) Domain: $(-\infty,0)\cup(0,1/3)\cup(1/3,\infty)$

b) x-intercept: $(3/2,0)$ $2x-3=0$ $2x=3$ $x=3/2$

y-intercept: none $\frac{2(0)-3}{0}=$ undef

c) VA: $x=0$

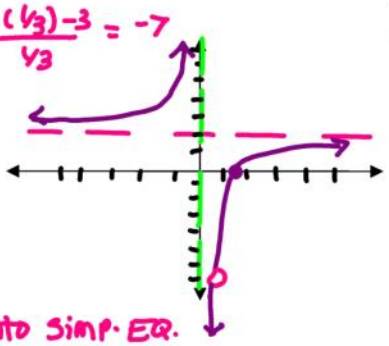
HA: $y=2$ $n=m$, ratio of L.C.

SA: none

* d) Holes: $(1/3,-7)$ $\frac{2(1/3)-3}{1/3}=-7$

Use simplified form for everything except domain!

* find point
* Substitute 1/3 into simp. EQ.



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

a) Domain: $(-\infty,\infty)$

b) x-intercept: $(0,0)$ $2(0)^3=0$

y-intercept: $(0,0)$

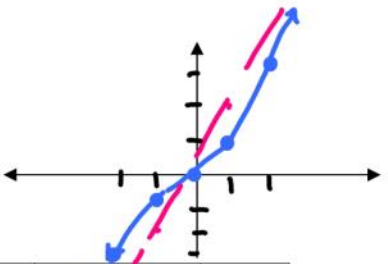
c) VA: none

HA: none $n>m$

* SA: $y=2x$

$$\begin{array}{r} 2x \\ x^2+1\,\overline{)\,2x^3} \\ -(2x^3+2x) \\ \hline -2x \end{array}$$

d) Holes: none



x	-2	-1	1	2	
y	-3.2	-1	1	3.2	