26) $\frac{3}{x^3-4x} = f(x)$

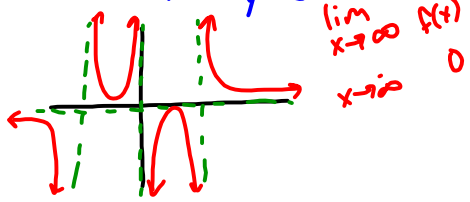
$\frac{3}{x(x^2-4)} = \frac{3}{x(x+2)(x-2)}$

VA @ $x=0, \pm 2$

Also HA $y=0$

$\lim_{x\to\infty} f(x) \quad 0$

$\lim_{x\to-\infty}$



23) $f(x) = \frac{x-2}{x^2-2x-3} \quad \frac{-2}{-3} = \frac{2}{3}$

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

$x-2=0$

$x=2$

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

VA $x=-2$ HA no

$+2 \pm \sqrt{4-4(1)(3)}$

$\sqrt{4-12}$

x-int $x^2-2x+3=0$

QF

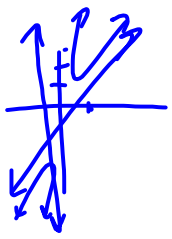
No

y-int $(0, \frac{3}{2})$

$$\begin{array}{r} x-4 \\ x+2 \overline{)\, x^2-2x+3} \\ -\,(x^2+2x) \\ \hline -4x+3 \\ -\,(-4x-8) \\ \hline 11 \end{array}$$

$x-4 + \frac{11}{x-2}$

slant asymp. $y=x-4$



VA @ $x=-2$

$\lim_{x\to -2^-} f(x) = -\infty$ $-2.000001 \to x$

$\lim_{x\to -2^+} f(x) = \infty$ $(x^2-2x+3)/(x+2)$

HA no but we have slant $y=x-4$

$\lim_{x\to-\infty} f(x) = -\infty$

$\lim_{x\to\infty} f(x) = \infty$

Ex 1

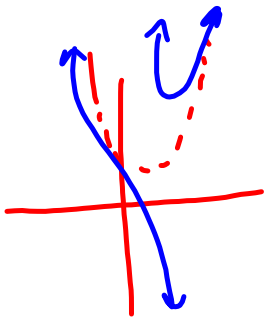
$$f(x) = \frac{x^3 - 3x^2 + 3x + 1}{x - 1}$$

$$x-1 \overline{)\, x^3 - 3x^2 + 3x + 1} \quad x^2 - 2x + 1$$

VA $x = 1$

HA none

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



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