

Agenda: 9/23/15

Period 3

Period 4

HW leader:  
Lesson 41

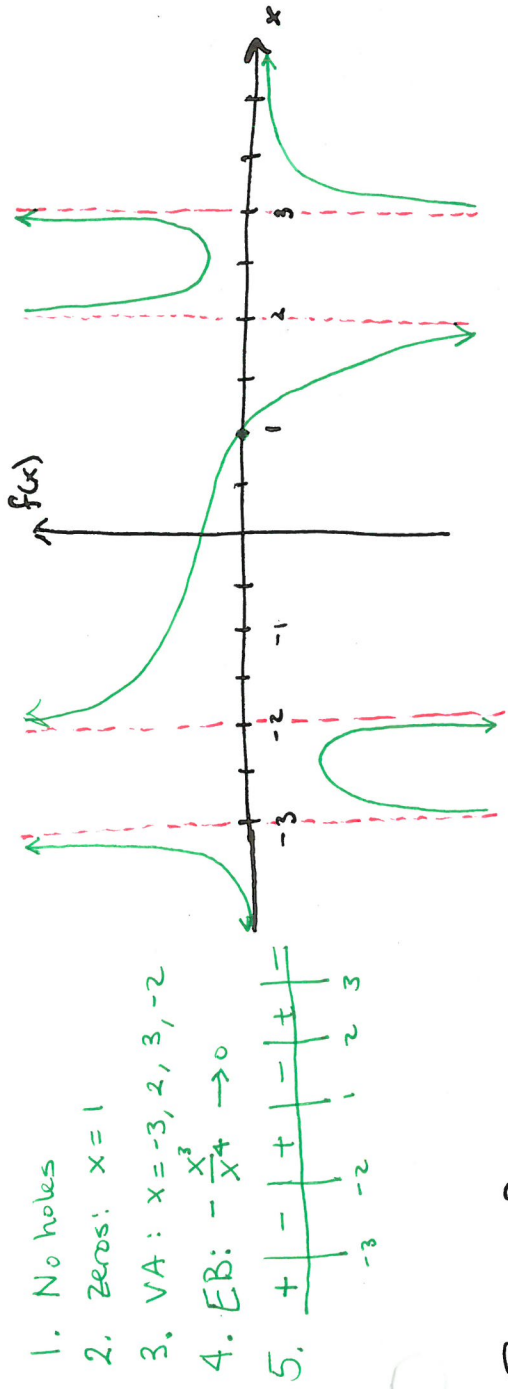
Nathalie Z

Maryam A.

Rational Functions III

Ex. 41.1 Graph:  $f(x) = -\frac{(x^2+2)(x-1)}{(x+3)(x-2)(x-3)(x+2)}$

*irreducible factor*



1. No holes
2. Zeros:  $x = 1$
3. VA:  $x = -3, 2, 3, -2$
4. EB:  $-\frac{x^2}{x^4} \rightarrow 0$
5. 
$$\begin{array}{c|c|c|c|c|} + & - & + & - & + \\ \hline & -3 & -2 & 2 & 3 \end{array}$$

Repeated factors:

- factor in numerator raised to an even power (and is a zero) then it touches the x-axis.
- factor in the denominator raised to an even power (and is a VA) then it doesn't switch sign across the VA.

Ex. Graph:  $g(x) = \frac{(x+1)^2(x^2+1)(x-2)}{(x+2)(x-3)^2(x-6)^2}$

1. No holes
2. Zeros:  $x = -1, 2$
3. VA:  $x = -2, 3, 6$
4. EB:  $y = 1$
5. 
$$\begin{array}{c|c|c|c|c|} + & - & - & + & + \\ \hline & -2 & -1 & 2 & 3 & 6 \end{array}$$

