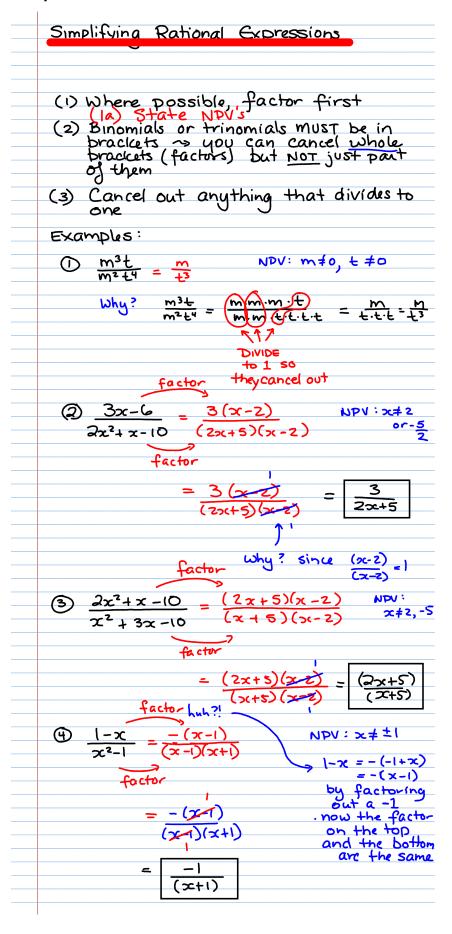
RATIONAL EXPRESSIONS
· A RATIONAL expression is an algebraic
fraction
Ex: $\frac{3x}{5y}$ or $\frac{3x^2+4x+1}{x^2-1}$ or $\frac{5x+1}{2x}$
5y
· Since we are not allowed to divide
by zero, the denominator of a rational expression cannot equal zero. This
means that the variable in the denominator cannot take on a value that
denominator Cannot take on a value that would make the denominator O
· · · · ·
Ex: $\frac{2x}{29}$ y cannot ever equal zero since 2.(0) =0 which would give us $\frac{2x}{2}$ which
would aire us ax which
9.50
is not allowed
So, For the expression $\frac{2x}{30}$ we state
the restriction or non-permissible value (NPV)
to be y = 0 also called the restriction
•
Ex $\frac{3x}{x-5}$ NPV: $x \neq 5$
<b>~</b> -3
$3x$ NPV: $x \neq \frac{3}{3}$
<i>2x</i> -3
from: 2x-3≠0
+3 +3
2x ±3 2 2
x ±3,
<b>₹</b>
2xy NPV: x≠-1/3y
3x + 9
from: 3x+y # 0 3x + -y
≈ + - <del>\</del> \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
2
$\frac{3}{x^2-4}$ NPV: $x \neq 2$ or $-2$
(usually written as
S Rewrite as: x # ±2)
( 3
$\Rightarrow (x-2)(x+2)$
since x=202 would make the denominatorzero



Ex 5 
$$\frac{16x^{2}-9y^{2}}{8x-6y} = \frac{(4x-3y)(4x+3y)}{2(4x-3y)}$$

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Examples	from	Text	assig	nment	
# 3a) ·	_4	x=0 u	sould	make th	ne.
	Z.	de	nomina	make thator zer	0
40)	<u>3a</u>	NP	1: a≠	4	
,	1-a		- 11	1	۱ ۱
		8	ince th	nat would	a make
		7	ne gen	ominator	300
#6a)	2¢(c	। <u>(</u> ई) <del>ई</del> )	٨	)PV: C # (	ors
	3.1.1	- <u>- 3</u>			
<b>+8c</b> )	b <sup>2</sup> + 2b-2 2b <sup>2</sup> -72	_ =	(b+0	-36)	
		•	(b+6)		NPV: b ≠ ± (
		2	(b-6)	(b+6)	U7 - 1
				1	
			b-4)		
			2(6-6)		