2.4 Rational Equations

NOTES



SUMMARY:



2.4 Rational Equations

PRACTICE

Directions: State all excluded values for the below equations.					
1) $\frac{4}{x} = 5$	$2)\frac{x+9}{9} = \frac{3}{x-8}$	$(3)\frac{1}{3x+2} - \frac{2}{x-2} = \frac{4}{x}$	4) $\frac{x}{2x-7} = 4$		
Directions: Solve each equa	ation. Make sure you state a	any excluded value(s).			
5) $\frac{8}{4} = \frac{4}{b}$	6) $\frac{3}{b-1} = \frac{7}{b}$	7) _{<i>h</i>} -	$\frac{4}{-10} = \frac{8}{h-7}$		
8) $5 = \frac{95}{1-3p}$	9) $-\frac{90}{1-4n} + 5 =$	= 11 10)	$-\frac{32}{2-3a} - 8 = -6$		

$11)\frac{7}{x+6} = \frac{2}{5}$	12) $\frac{4}{n} = \frac{5}{n-1}$		$13)\frac{8}{x+4} = \frac{6}{x-7}$
$14)\frac{100}{4v-3} = 4$	$(15)\frac{110}{3g+4} - 10 =$	5	16) $8 = 4 - \frac{156}{1 - 8n}$
Directions: Simplify each expression 17) $(2x^5 + 6x^4) + (3x^4 - 5x^2 + x)$	l.	18) (6h + 1)(6h -	- 1)
19) $(x-1)(x^2-5x-1)$		20) (5 <i>y</i> – 4)— (<i>y</i>	7 – 9)

Directions: Solve each equation. Make sure you state any excluded value(s).				
$1)\frac{6}{k+3} = \frac{10}{k-9}$	$2)\frac{15}{\nu+1} - 7 = -12$			

3. Ricardo says that he checks the answer to a division problem by performing multiplication. For example, he says that $20 \div 4 = 5$ is correct because $5 \times 4 = 20$, and $\frac{3}{\frac{1}{2}} = 6$ because $6 \times \frac{1}{2} = 3$.

a. Using Ricardo's reasoning, explain why there is no real number that is the answer to the division problem $5 \div 0$.

b. Johann says that the expression $\frac{5}{x+2}$ has a meaningful value for whatever value one chooses to assign to x. Do you agree? Why or why not?

c. Talia says that the expression $\frac{3x-6}{x-2}$ always has the value 3 for whichever value one assigns to x. Do you agree?

4. Mr. Kelly loves throwing axes in his spare time. He's not very good though. He keeps track of the number of times he actually hits his wooden target. He finds his on target average by dividing the number of times he hits the wooden target by the number of times he throws the axe in total. He finds it as a decimal rounded to two places. After his first week of practicing he hits the target 9 times out of 35 attempts.

a. What is his on target average for his first week?

b. How many times in a row would he need to hit his target to get his on target average above .400?

EXIT TICKET -

1. Write an equation that would have the restriction $x \neq 4$

2. Write an equation that would have the restriction $x \neq -3$ and $x \neq \frac{1}{2}$