Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
How to Solve **RATIONAL EQUATIONS**	**There are a couple methods for solving rational equations. One of the methods is described below.**
	❶ Set the equation up as a proportion. $\left(\dfrac{a}{b} = \dfrac{c}{d}\right)$
	❷ Cross-Multiply ($ad = bc$)
	❸ Solve the remaining equation.
	❹ Check for **extraneous solutions.**

EXAMPLES

Directions: Solve each equation below.

1. $\dfrac{18}{x-1} = \dfrac{6}{x+3}$

2. $\dfrac{v-1}{v+7} = \dfrac{3}{5}$

3. $\dfrac{a}{6} = \dfrac{a-3}{4}$

4. $\dfrac{5}{2} = \dfrac{k-8}{k-2}$

5. $\dfrac{w}{w+3} = \dfrac{5}{w+7}$

6. $\dfrac{4}{r} = \dfrac{r-8}{5}$

7. $\dfrac{x+1}{x} = \dfrac{-7}{x-12}$

8. $\dfrac{c+2}{6} = \dfrac{3}{c-1}$

9. $\dfrac{15}{k^2-1} = \dfrac{5}{2k-2}$

10. $\dfrac{p-3}{2} = \dfrac{2p+5}{3p}$

	11. $\dfrac{3y-4}{y-5} = \dfrac{y-2}{y+2}$	**12.** $\dfrac{4z-3}{5} = \dfrac{1}{2z}$

Creating a **PROPORTION**

For the following problems, you will need to combine one side of the equation in order to create a proportion!

13. $\dfrac{7x}{9} + \dfrac{1}{3} = \dfrac{x-1}{2}$	**14.** $\dfrac{w-3}{3} + \dfrac{w}{2} = \dfrac{w+4}{2}$
15. $\dfrac{2n-1}{6} - \dfrac{n}{3} = \dfrac{n+4}{18}$	**16.** $\dfrac{3h}{2} - \dfrac{1}{4} = \dfrac{10h}{8}$
17. $\dfrac{g}{g+2} - \dfrac{2}{g+2} = \dfrac{5}{g+4}$	**18.** $\dfrac{y}{2} - \dfrac{y}{8} = \dfrac{2}{3y}$
19. $\dfrac{1}{4} + \dfrac{1}{4a} = \dfrac{3}{2a}$	**20.** $\dfrac{11}{4x-4} - \dfrac{2}{x-1} = \dfrac{x}{8}$