Butterworth Math 120   Paper HW 8 , due 3/19
Reminders: Please **show all your work** neatly <u>on this worksheet</u>.
This should be some of your most careful work!

Name: _____

	Show your work neatly (when relevant). Place your answer in the box at the right	
1.	Find the domain for: $\qquad$ $f(x) = \dfrac{2x^2 + 12x + 16}{x^2 + 7x + 12}$	
2.	Find the domain for the following rational expression. $\dfrac{x - 2}{x^2 + 9}$	
3.	Simplify the following rational expression. $\qquad$ $\dfrac{x^2 + xy - 4x - 4y}{x^2 - 3xy - 4y^2}$	
4.	Simplify the rational function's right hand side. $f(x) = \dfrac{3x - 12}{3x^2 - 16x + 16}$	
5.	Multiply. Make sure your answer is in simplest form. $\dfrac{p^3 - t^3}{p^2 - t^2} \bullet \dfrac{p^2 + 6pt + 5t^2}{p^2 t + pt^2 + t^3}$	

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6.	Divide. Make sure your answer is in simplest form. $$\frac{7t + 14}{t - 7} \div (3t^2 + 2t - 8)$$	
7.	Simplify the following complex fraction using the LCD method. *Hint: Make sure that polynomials are ordered with leading coefficients of 1.* $$\frac{\dfrac{5}{y - 3} - \dfrac{4}{9 - y^2}}{\dfrac{3}{y - 3} - \dfrac{1}{3 - y}}$$	
8.	Simplify the following complex fraction using the division method. Show all work. $$\frac{\dfrac{x - 2}{x^2 - 9}}{\dfrac{x^2 - 4}{x + 3}}$$	
9.	For the following rational expressions find the LCD. $$\frac{4}{3x^4}, \frac{2}{6x^2}, \frac{1}{2x} \ \& \ \frac{1}{4}$$	
10.	For the following rational expressions find the LCD. $$\frac{2}{x - 2} \ \& \ \frac{-14}{x^2 + 3x - 10}$$	