Name:_____ Date:_____

HW Pre-Calculus 11 Section 6.2 Multiplying and Dividing Rational Expressions

1. Multiply or Divide each of the following rational :

a) $\frac{8x}{9}\times\frac{27y}{24x^3}$	b) $\frac{14a^2}{2b}\times\frac{8b^3}{21a}$	c) $\frac{14x^2y}{6xy}\times\frac{(4xy)^2}{8xy}$
d) $\frac{-6x}{14}\div\frac{12x^2}{35x}$	e) $\frac{-15xy}{9y^3}\div\frac{9x^2}{-16xy}$	f) $\frac{2x+1}{15y^2}\div\frac{12xy}{27y^3}\div\frac{8x+4}{9xy}$
g) $\frac{8x-4}{x-3}\times\frac{2x+6}{3x-6}$	h) $\frac{5x^2-10}{3x-y}\times\frac{27x-9y}{4x^2-8}$	i) $\frac{3x+6}{3x-4}\times\frac{6x^2-8x}{4x+8}$

2. Factor and simplify. Then state all the NPV's:

a) $\frac{(2x)^2}{5y}\times\frac{10x}{8y}\div\frac{15x}{(4y)^2}$ NPV's:	b) $\frac{3(3x-4)}{8}\times\frac{6x}{12(3x-4)}$ NPV's:	c) $\frac{2x-3}{x+2}\div\frac{3x+4}{x^2-9}$ NPV's:
d) $\frac{15x}{2x+6}\div\frac{10x}{3x+9}$ NPV's:	e) $\frac{(x+1)(x-1)}{(2x+1)}\times\frac{8x+4}{x^2+2x+1}$ | NPV's:	f) $\frac{8x^3-2x}{5x(x^4-13x^2+36)}$ NPV's:

g) $\frac{x+14}{x^2-16} \div \frac{x^2-5x-14}{x^2-2x-8}$ NPV's:	h) $\frac{(x+1)^2}{x^2-1} \times \frac{x^2-4}{x^2+3x+2}$ NPV's:	i) $\frac{x^2+5x+6}{x^2-5x+6} \div \frac{x^2-x-6}{x^2+x-6}$ NPV's:
j) $\frac{x^2-16y^2}{6x^2y} \div \frac{x^2+xy-20y^2}{4x^3y^2}$ NPV's:	k) $\frac{x^2+4x-5}{3x-6} \times \frac{x-2}{1-x}$ NPV's:	L) $\frac{m^2-9mn+14n^2}{m^2+7mn+12n^2} \div \frac{3m^2-21mn}{4m^3+16m^2n}$ NPV's:
m) $\frac{3x^2+3x-6}{x^2y-7xy} \times \frac{x^2y-13xy+42y}{6x^2+12x}$ NPV's:	n) $\frac{x+2y}{x-3y} \times \frac{x^2-9y^2}{x^2-4y^2} \div \frac{x+3y}{x-2y}$ NPV's:	0) $\frac{(3a+7b)^2}{2a-5b} \times \frac{4a^2-25b^2}{9a^2-49b^2} \div \frac{2a+5b}{3a-7b}$ NPV's:

3. A student simplifies the following expressions shown below. Indicate all the mistakes shown:

$s1: \frac{x-5}{5-x}$ $s2 := \frac{x-5}{5-x}$ $s3 := \frac{x}{-x}$ $s4 := \frac{1}{-1}$ $s5 := -1$	$s1: \frac{a^2+6a+8}{a^2+8}$ $s2 := \frac{a^2+6a+8}{a^2+8}$ $s3 := \frac{a^2+6a}{a^2}$ $s4 := \frac{a(a+6)}{a^2}$ $s5 := \frac{a+6}{a}$	$s1: \frac{24a}{7b} \div \frac{13b}{21ab^3} \times \frac{3a}{b^2}$ $s2 := \frac{24a}{7b} \times \frac{21ab^3}{13b} \times \frac{b^2}{3a}$ $s3 := \frac{24a}{7b} \times \frac{21ab^3}{13b} \times \frac{b^2}{3a}$ $s4 := \frac{24ab^2}{13}$
$s1: \frac{a^2-16}{a+7} \div \frac{a^2+16}{a-7}$ $s2 := \frac{a+7}{a^2-16} \times \frac{a^2+16}{a-7}$ $s3 := \frac{a+7}{a^2-16} \times \frac{a^2+16}{a-7}$ $s4 := \frac{1}{(a-4)(a+4)} \times \frac{(a+4)(a+4)}{-1}$ $s5 := -\frac{a+4}{a-4} = -1$	$s1: \frac{x^2-6}{x+3} \div \frac{x^2-9}{x-3}$ $s2 := \frac{(x+\sqrt{6})(x-\sqrt{6})}{x+3} \times \frac{x-3}{x^2-9}$ $s3 := \frac{(x+\sqrt{6})(x-\sqrt{6})}{x+3} \times \frac{x-3}{(x-3)(x+3)}$ $s4 := (x+\sqrt{6})(x-\sqrt{6})$	

4. What are the NPV's of the following rational expression? $\frac{2x}{x^2+9} \times \frac{3x^2}{x^2+1}$

5. Simplify each of the following rational expressions and indicate the NPV

a) $\frac{\frac{2}{3x}+4}{5-\frac{2}{x}}$	b) $\frac{\frac{1}{3}+6x}{\frac{1}{9}-3x}$	c) $\frac{\frac{1}{4x}+7x}{\frac{1}{6}-\frac{3}{2x}}$

6. Simplify and find all the NPV's:

$$\frac{y+\frac{2y}{y+2}}{1+\frac{4}{y^2-4}}$$