Multiplying and Dividing Rational Functions Name:_____

Analysis:

1.

a) What is this question asking us to do?	$(b+6)\cdot\frac{10b}{2b+12}$
b) Do we need a common denominator?	
c) Why do we not flip the second fraction?	
d) How did we make $b+6$ a fraction?	$\frac{(b+6)}{1}\cdot\frac{10b}{2b+12}$
e) Why do we factor every expression in the problem?	$\frac{(b+6)}{1}\cdot\frac{2\cdot 5\cdot b}{2(b+6)}$
f) There are 4 factors in the numerators. List them.	
g) There are 3 factors in the denominators. List them.	
h) List any factors that divide to equal one.	$5b$ $b\neq -6$
i) Once all the factors have been simplified how do we complete the multiplication problem?	
j) Why are there restrictions on b?	

Follow Up Question: $\frac{15x}{x-3}\cdot\frac{x^2+2x-15}{5x+25}$

2.

a) What is this problem asking us to do?	$\frac{2x-9}{4x^3-6x^2} \div \frac{18x^2-81x}{2x^2-9x+9}$
b) Do we need a common denominator?	
c) Why do we factor each expression?	$\frac{2x-9}{2x^2(2x-3)} \div \frac{9x(2x-9)}{(2x-3)(x-3)}$
d) What restrictions come from the denominator before you multiply by the reciprocal?	
e) Dividing by a fraction is the same thing as multiplying by its reciprocal. Explain what this means.	$\frac{2x-9}{2x^2(2x-3)} \cdot \frac{(2x-3)(x-3)}{9x(2x-9)}$
f) There are 3 factors in the numerators. List them.	
g) There are 8 factors in the denominators. List them.	
h) What does $\frac{(2x-9)}{(2x-9)}$ equal? List any other factors that divide to equal one.	$\frac{x-3}{2x^2(9x)}$
i) Once all the factors have been simplified, how did we complete the multiplication problem?	
j) There is now one factor in the numerator. List it below.	$\frac{x-3}{18x^3}$
k) There are now 6 factors in the denominator. List them below.	$x \neq 0, \frac{9}{2}, \frac{3}{2}, 3$
l) Do any of these factors divide to equal one?	

Follow Up Question: $\frac{6x}{x^2+2x-15} \div \frac{2x^2+4x}{x-3}$