Name: ___________________________________ Points: ______

1. Complex Fractions

Simplify.

a. $\dfrac{1-\dfrac{x}{w}}{\dfrac{x^2}{w^2}-1}$ LCD= _______________

b. $\dfrac{\dfrac{2}{x}-\dfrac{x}{2}}{\dfrac{5}{x^2}-9}$ LCD= _______________

c. $\dfrac{\dfrac{2}{a+2}+\dfrac{6}{a+7}}{\dfrac{4a+13}{a^2+9a+14}}$ LCD= _______________

Schwartzman (1994) defines **Fractions**: "From Latin word 'fractus', past participle of the word frangere 'to break' which is the native English conjugate. The Indo-European root is 'bhreg'- of the same meaning. Related borrowings from the Latin includes 'fragile, breakable, diffraction,(breaking up into colors) and fragment.' A fraction is literally a piece broken off something. In fact, in the 16th century English mathematics books referred to fractions as 'broken number'."

2. Fractional Equations

a. What is the difference between $\dfrac{2c}{2c-1}+\dfrac{1}{c}$ and $\dfrac{2c}{2c-1}+\dfrac{1}{c}=\dfrac{1}{2c-1}$?

____

____

Supported by CUNY OAA-Improving Undergraduate Learning Outcomes in Mathematics, BMI, NSF STEP #0622493,and Perkins

The Babylonians, who lived in the area now known as Iraq , were intensely interested in watching the stars. From these observations, they noticed patterns and deduced that a year – a repetitive pattern with changes in seasons - consisted of 360 days. From this came the idea of fractions, as a year could be divided into days, and days could be multiplied into a year. The use of fractions dates from around 3000 B.C. (Smith, 1958).

b. Solve. $\frac{2c}{2c-1}+\frac{1}{c}=\frac{1}{2c-1}$

LCD= ___________________ $c \neq$ ________

c. Solve. $\frac{2k}{k-3}+\frac{6-2k}{k^2-9}=\frac{k}{k+3}$

LCD= _________________ $k \neq$ _______

d. Solve. $\frac{9}{y^2+7y+10}+\frac{3}{y+5}=\frac{5}{y+2}$

LCD= ___________________ $y \neq$ ________

References:
Smith, D.E. (1958). *History of mathematics*. Vol. 1. New York, NY:. Dover Publications

Swartzman, S. (1994). *The words of mathematics: An etymological dictionary of mathematical terms used in English*. USA: The Mathematical Association of America.

Supported by CUNY OAA-Improving Undergraduate Learning Outcomes in Mathematics, BMI, NSF STEP #0622493,and Perkins