First Quiz

September 10, 2009

1. For each of the following rational expressions, find the values of x for which they are undefined and the values of x for which they are equal to 0. Then simplify each expression.

   (a) $\dfrac{5x}{5x-15}$

   (b) $\dfrac{x^2+7x-44}{-2x^2+5x+12}$

   (c) $\dfrac{x^3+27}{x^2+9x+18}$

   (d) $\dfrac{2x-3}{-2x^2-3x+9}$

2. Perform the indicated operations. Simplify the result as much as possible.

   (a) $\dfrac{x^2+x-12}{x^2-x-12} \cdot \dfrac{x^2-9}{x^2+8x+16}$

   (b) $\dfrac{x^2-3x+2}{x+3} \div \dfrac{x^2-2x+1}{x^2+5x+6}$

   (c) $\dfrac{2x^2y^3}{w^2z^3} - \dfrac{3}{w^3z^2}$

   (d) $\dfrac{-x-2}{x^2-7x+12} + \dfrac{x+2}{x-4}$