

**MTH 30, Sec. 2996S. QUIZ 3. NAME:\_\_\_\_\_**

[12] **1a)** Verify that if  $f(x) = \frac{x-1}{x-2}$  then  $f^{-1}(x) = \frac{2x-1}{x-1}$ .

b) Find the domain and range of  $f$ . (HINT: Remember that the range of a function is the domain of its inverse.)

[8] **2.** Find the inverse of the function  $f(x) = \frac{5}{x} - 3$ .

**3.** BIG CHALLENGE! Find a function  $f$  that satisfies:  $f^{-1}(x) = \frac{1}{f(x)}$ .

(NOTE: there are many, but they are not easy to find. Do not do this exercise right now, but keep thinking about it. Good answers will have a BIG bonus.)