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**Math 2010, Winter 2007, Quiz 1**  
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Let  $f(x) = 1 - x$  and  $g(x) = 1/x$ .

1. Find  $f(g(x))$ .
2. Find  $g(f(x))$ .
3. Find the domain of  $f \circ g$ .
4. Find the domain of  $g \circ f$ .
5. Is  $f \circ g = g \circ f$ ? Why or why not? (One reason is enough.)

Extra credit curiosity: there are exactly six functions which can be obtained by composing  $f$  and  $g$  in every possible way. See if you can find them all.