

# Calculus: Inclass Homework 5

October 25th, 2007

1. Find the tangent at  $(\sqrt{2}/2, \sqrt{2}/2)$  to the function implicitly given as

$$x^2(x^2 + y^2) = y^2.$$

2. Let  $f(x)$  and  $g(x)$  be two functions satisfying

$$f(g(x)) = x, \quad f'(x) = \sqrt{1 + (f(x))^2}.$$

- (a) Compute  $g'(x)$ .  
(b) Use part (a) to find a pair of functions which satisfies the above relations.