## Math 2A Worksheet: 3.4/3.5 The Chain Rule & Implicit Differentiation

Write your names and Student ID numbers at the top of the page

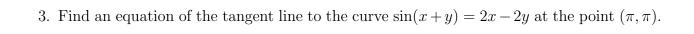
1. Find  $\frac{dy}{dx}$ 

(a) 
$$y = \left(x + \frac{1}{x}\right)^5$$

(b) 
$$xe^y = x - y$$

2. Use implicit differentiation to verify the following.

$$\frac{d}{dx}(\cos^{-1}x) = \frac{-1}{\sqrt{1-x^2}}$$



4. If g is a twice differentiable function and  $f(x) = xg(x^2)$  find f''(x).

5. Find the derivative of  $y = \tan^{-1}(x^2)$