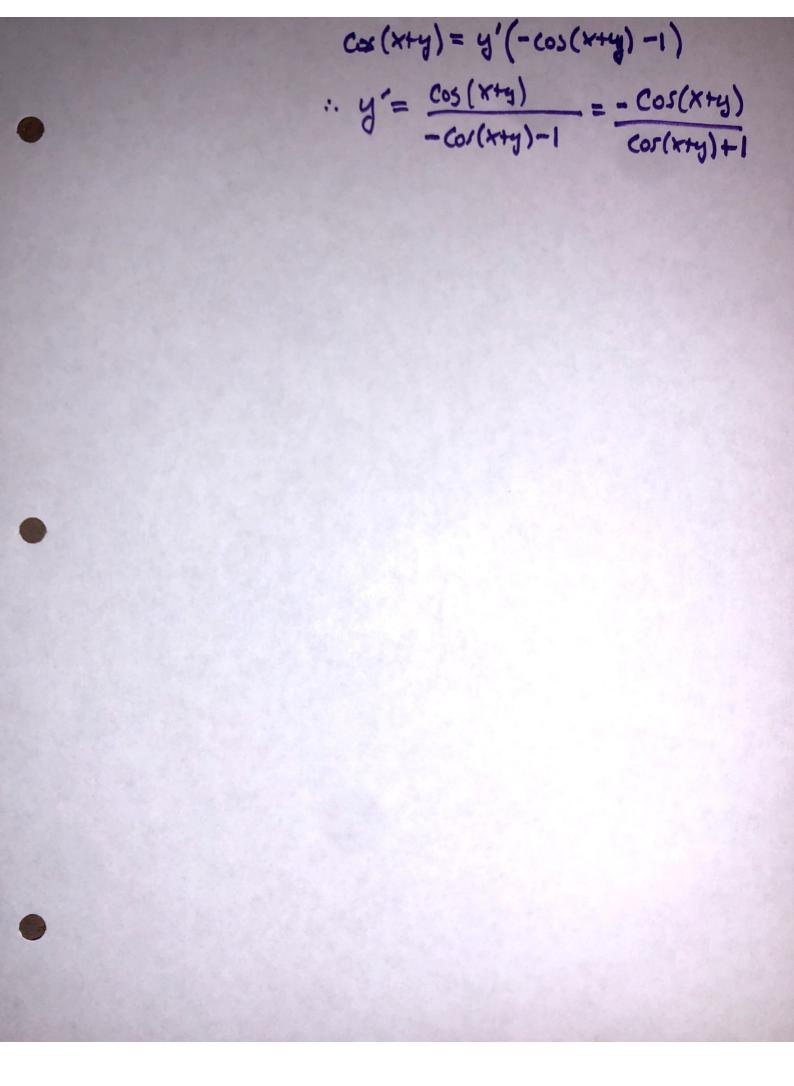
§ 3.5, Implient Differentiation In some serse, you have been lied to! y = Bunch of x's Ex: x3 + 2xy + y2 = 4, Find dy. [x]=1 [y'] = 2y[y] [A] = A. (x.A) = =[x7y+x(y] = 244 = 4 + \* 4 [x3+2my+y2]=[H] = 3x2+ [2x] y + 2x[y] + 2y[y] = 0 3x2 + 2y +2xy +2yy =0 3x2+2y=-2xy'-2yy' 3x2+5A = A (-5x-54)  $y' = dy = \frac{3x^2 + 2y}{-2x - 2y}$ Sin(x+y) + y = 1, find dyx. [SIN (X+y) +y] = [I] COS(X+y) (1+y')+y'=0

COS (X+y) [X+y] + y'=0 COS(X+y) +y'=0

COS (X+y) [X+y] + y'=0 COS(X+y) -y'=0



Find the equation of the line tangent to x2+3xy-y3=9 at (2,1) y-40 = m(x-x0) 4-1=m(x-2), m= 3 (21) [x2+3xy-y3]=[9] = 2x + 3(x) y + x(y) - 3y [y] =0 2x + 3y + 3xy - 3y2y=0 : 2x+3y= 3y2y'-3xy'  $\frac{2x+3y}{3y^2-3x}=y^2$ Plug in (2,1) =>  $\frac{2(2)+3(1)}{3\cdot(1)^2-3(2)}=\frac{7}{3\cdot6}=-\frac{7}{3}$ y-1=-3(x-2)