

MAT 170 Section 005

October 4, 2005

Names _____

Please work in groups with no more than four people and complete this worksheet during class. Hand in one worksheet for each group.

1. Differentiate:

(a) $y = \frac{\sin x}{1 + \cos x}$

(b) $y = \sin^{-1} x$

(c) $y = \cos(x^2 + 9)$

(d) $y = \tan^3(9x + 1)$

(e) $y = \frac{\sin mx}{x}$.

(f) $y = x \tan^{-1} \sqrt{x}$.

(g) $y = \tan^{-1} (\sin^{-1} \sqrt{x})$.

2. Find y' :

(a) $x^2 + xy + y^2 = 1$.

(b) $x \tan y = y - 1$.

(c) $xe^y = y - 1$.

3. $f(x) = 3x^4 - 2x^3 + x^2 - 4x + 2$ find $f^{(5)}(x)$.

4. Find y'' if $x^2 + xy + y^2 = 1$.