

## MAT 170 Section 005

September 30, 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)  $\frac{d}{dx} [5y^2]$ .

(b)  $\frac{d}{dx} [x^2]$ .

(c)  $\frac{d}{dx} [\cos(y)]$ .

2. Find  $\frac{dy}{dx}$  if  $5y^2 + \cos(y) = x^2$ .

3. Differentiate:

(a)  $\frac{d}{dx} [7y^4]$ .

(b)  $\frac{d}{dx} [x^3y]$ .

4. Find the slope of the tangent line at  $(4, 0)$  to the graph of  $7y^4 + x^3y + x = 4$ .

( *Hint: Find  $\frac{dy}{dx}$  when  $x = 4$  and  $y = 0$ .*  )