

Math 241 Worksheet 6 (two-sided)

Name: _____

Section (circle one): **3** **4**

1. Find the derivatives of the following functions.

(a) $y = \sqrt{3x + 5} + \sin(x^2) + \cos^2(x)$

(b) $f(x) = \frac{\tan(5x)}{x^2 + 7x}$

(c) $g(x) = \sqrt{\sec(3x + 7) - x^3}$

2. Use implicit differentiation to find $\frac{dy}{dx}$ if $x^3y^5 = \sin(2x + 4y)$.

3. Find the tangent line and normal line to the curve $x^3 + y^3 + x + y = 11$ at the point (1,2).
(The normal line is the line through the same point that is perpendicular to the tangent line and hence has negative reciprocal slope compared to the slope of the tangent line.)