Math 241 Spring 2019 Professor MG
Classwork 4   Name: _____

Show all work and circle/box your final answer. All answers must be simplified unless stated otherwise.

1. Find the derivatives of the following functions: (You do not need to simplify)

   (a) $g(t) = \tan^4 t + t^2$

   (b) $f(x) = 2x^2 \sin x$

   (c) $f(x) = \dfrac{(2x + 3)}{(4x + 5)^7}$

   (d) $f(x) = \sqrt{\sin(2x)}$

   (e) $g(t) = \sin\left(\dfrac{t}{\sqrt{t + 1}}\right)$

   (f) $f(x) = \sqrt{4x + 5}(\sec x)$

2. Use implicit differentiation to find dy/dx: $2xy + y^2 = x + y$

3. Find the equation of the line tangent and the line normal to $y^2 - xy = 3x^3y^4 + x^2 + 4$ at the point $(0, 2)$