Math 171 - Quiz 6

Name _____

October 3, 2013

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (4 points) Determine each derivative.

   (a) $\dfrac{d}{dx}\sqrt[5]{(x^4+6)^2}$

   (b) $\dfrac{d}{d\theta}\tan(3\theta^2)$

2. (3 points) Assume y is implicitly defined as a function of x by the equation

   $$x^2 + xy^2 + 3 = y.$$

   Find dy/dx.

3. (3 points) The area of a circle is increasing at a rate of $2\,\text{in}^2/\text{sec}$. Find the rate of change of its radius at the moment the radius is $8\,\text{in}$.