

Quiz 8

Name: _____

Math 4548

March 28, 2014

1. (3 points). At this point, the only definition of the function $f(x) = x^{\sqrt{2}}$ which makes sense is: $f(x) := e^{\sqrt{2}\ln x}$. Using this definition, prove that $f'(x) = \sqrt{2} x^{\sqrt{2}-1}$.

2. (2 points). Similarly, the definition of $g(x) = (\sqrt{2})^x$ which makes sense is: $g(x) := e^{(\ln \sqrt{2})x}$. Using this, calculate $g'(x)$.