Quiz 3

Student ID Number: Name _____

Math 140B, 5PM

Please justify all your answers January 31, 2019

Please also write your full name on the back

1. Show that $\sum_{n=1}^{\infty} \frac{1}{n^3} \sin nx$ converges uniformly on $\mathbb{R}$ to a continuous function. Show that the limit function is continuously differentiable on $\mathbb{R}$.

2. Compute $f(x) = \sum_{n=1}^{\infty} \frac{x^n}{n}$. Use this to compute $\sum_{n=1}^{\infty} 2^n/(n5^n)$.