

Quiz 2 — 09/15/16

Answer all questions in a clear and concise manner. Answers that are without explanations or are poorly presented may not receive full credit.

1. Compute the improper integral $\int_1^{\infty} \frac{1}{(2x+1)^3} dx$.

2. Let $f(x) = x^3$. What is the smallest number of sub-intervals n we must use on the interval $[0, 2]$ so that the error in the trapezoidal approximation E_T of $\int_0^2 f(x) dx$ is less than .01? Hint: $|E_T| \leq \frac{K(b-a)^3}{12n^2}$, where a and b are the endpoints of the interval and $|f''(x)| \leq K$ for all $a \leq x \leq b$.