

Math 1B: Quiz 3

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Name: _____

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You must always justify your answers. This means: show your work, show it neatly, and when in doubt, use words (and pictures!) to explain your reasoning. No justification = no points.

1. (10 pts) You know that $\int_0^{2\pi} \sin^2 x \, dx = \pi$. But perhaps you don't know the numerical value of π — maybe you only know that $3 \leq \pi \leq 4$. If you were to use the midpoint rule to approximate $\int_0^{2\pi} \sin^2 x \, dx$, how many intervals would you need to take to assure that the error of your estimation is less than $0.00001 = 10^{-5}$?

2. (0 pts) What are your plans for the long weekend?