

Math 1A: Quiz 13
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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. (5 pts) Find the *derivative* of the following function:

$$g(x) = \int_0^{2x+1} \sqrt{\sin t} \, dt$$

2. (5 pts) Find the following definite integral:

$$\int_{-1}^2 (x^2 + 1) \, dx$$

3. (bonus) On the back of this page, find $\int_{-1}^1 \frac{1}{x^2 + 1} \, dx$.