

Show all work and circle/box your final answer. All answers must be simplified unless stated otherwise. If you finish early, you may leave with my approval.

1. (*0 points*) Find $\frac{d}{dx} \int_1^{\sin x} 3t^2 dt$ by

- (a) By evaluating the integral and differentiating the result
- (b) By differentiating the integral directly.

2. (0 points) Solve $\int \frac{x^2 + 1}{(x^3 + 3x)^2} dx$