

Name \_\_\_\_\_

**You have 12 minutes for this quiz.**

1. (2 points) If  $g(x) = \int_x^3 \cos(t^2) dt$ , then find a formula for  $g'(x)$ .

2. (2 points) At 4:00 AM, the layer of ice on Lake Mendota was 6 inches thick and its thickness was increasing at a rate of  $0.2t$  inches per hour where  $t$  represents the number of hours since 4:00 AM. How thick was the ice at noon that same day?

3. (2 points each) Evaluate the following definite and indefinite integrals.

$$(a) \int_0^1 \frac{10}{2x+1} dx$$

$$(b) \int \frac{6x^2 + 5}{x} dx$$

$$(c) \int \frac{x}{e^{x^2}} dx$$