Name _____

Homework 21
Section 6.4

1. (4) Let $F(x) = \int_1^x (t^2 + 2)\, dt$. Evaluate the following.

   (a) $F(2)$

   (b) $F(-1)$

2. (4) Recall that $\mathrm{Si}(x) = \displaystyle\int_0^x \frac{\sin t}{t}\, dt$. Compute $\frac{d}{dx}\left[\mathrm{Si}(x^2)\right]$.

3. (6) Calculate $\displaystyle\frac{d}{dx}\int_{\sin x}^{5} e^{t^2}\, dt$.

4. (6) The *error function*, $\text{erf}(x)$, is defined as

$$\text{erf}(x) = \frac{2}{\sqrt{\pi}} \int_0^x e^{-t^2}\, dt.$$

Compute $\frac{d}{dx}[\text{erf}(\sqrt{x})]$.