Math 172 | Quiz 3 | Spring 2010

(1) $\frac{d}{dx}\left(e^{x^2}\right) = 2xe^{x^2}$

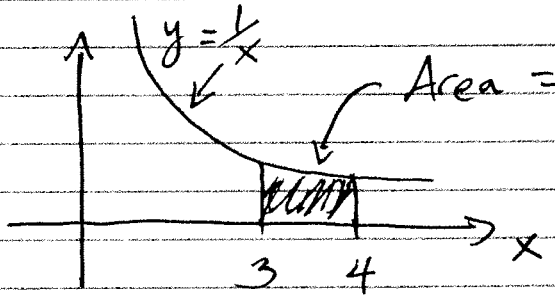
(2) $\frac{d}{dx}\left(\ln(\sin x)\right) = \frac{\cos x}{\sin x}$

(3) $\int \frac{x}{x^2+1}\,dx = \frac{1}{2}\ln|x^2+1| + C$

$(u = x^2+1)$

(4) $\int \cos x\, e^{\sin x}\,dx = e^{\sin x} + C$

(5)



$$\text{Area} = \int_1^4 \frac{1}{x}\,dx - \int_1^3 \frac{1}{x}\,dx$$

$$\ln(4) - \ln(3) = \ln\left(\frac{4}{3}\right)$$