

MATH 1850 Sec 001  
SINGLE VARIABLE CALCULUS I

QUIZ 10  
April 18, 2013

Name (Last, First) Key

1. Express the limit

$$\lim_{\|P\| \rightarrow 0} \sum_{k=1}^n \cos(c_k) \Delta x_k$$

as a definite integral where  $P$  is a partition of  $\left[-\frac{\pi}{8}, \frac{\pi}{5}\right]$ .

$$\int_{-\pi/8}^{\pi/5} \cos x \, dx$$

2. Guess an antiderivative for the integrand function and then evaluate the definite integral.

$$\int_4^7 x e^{x^2} \, dx$$

$$\frac{d}{dx} (e^{x^2}) = 2x \cdot e^{x^2}$$

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

$$\int_4^7 x e^{x^2} \, dx = \left. \frac{e^{x^2}}{2} \right|_4^7 = \frac{e^{49} - e^{16}}{2}$$