Name: _____

Math 253 Calculus III (Bueler) Wednesday 4 April 2018

Quiz #8

In class. 25 minutes. No textbook or notes or calculator. 30 points total.

1. (*7 pts*) Calculate the iterated integral and simplify your answer.

$$\int_0^3 \int_0^{\pi/2} t^2 \sin\phi \, d\phi \, dt =$$

2. (*8 pts*) Calculate the double integral over the given rectangular region (and simplify).

$$\iint_R x \sec^2 y \, dA, \qquad R = \left\{(x,y) \,\middle|\, 0 \le x \le 2,\, 0 \le y \le \pi/4\right\}$$

3. (*7 pts*) Sketch the region of integration and change the order of integration.

$$\int_0^2 \int_{x^2}^4 f(x,y)\,dy\,dx =$$

4. (*8 pts*) Evaluate the integral by reversing (changing) the order of integration. Simplify your answer. (*Hint.* Sketch the region.)

$$\int_0^1 \int_y^1 e^{x^2}\,dx\,dy =$$