

MATH 2850 Sec 007
ELEMENTARY MULTIVARIABLE CALCULUS
QUIZ 3
October 11, 2012

Name (Last, First) Key

1. Evaluate the iterated integral.

$$\begin{aligned} & \int_0^3 \int_{-2}^0 (x^2y - 2xy) dy dx \\ &= \int_0^3 \left(\frac{x^2y^2}{2} - xy^2 \right) \Big|_{-2}^0 dx \\ &= \int_0^3 \left(0 - \left(\frac{4x^2}{2} - 4x \right) \right) dx \\ &= \int_0^3 (4x - 2x^2) dx \\ &= \left. \frac{4x^2}{2} - \frac{2x^3}{3} \right|_0^3 \\ &= (18 - 18) = \boxed{0} \end{aligned}$$

2. Sketch the described region of integration.

$$0 \leq y \leq 1, y \leq x \leq 2y$$

