# Changing the order of Integration.

Spring 2016

Attendance Quizzes

March 21, 2016

Assume that

$$\iint_R f(x,y)\,dx\,dy \;=\; \int_0^5 \int_0^{2y} f(x,y)\,dx\,dy.$$

Answer the following.

1. Sketch the region of integration $R$. **Answer:** $R$ is the triangle with vertices $(0,0),(10,5),(0,5)$. Thus the section for a fixed $y$ goes from the line $x = 0$ to $x = 2y$.

2. Rewrite the integral so that the new integrand is written as $f(x,y)\,dy\,dx$ Write down the new limits carefully and in proper notation. **Answer:**

$$\int_0^{10} \int_{\frac{x}{2}}^5 f(x,y)\,dy\,dx.$$