Class Exercise 1

1. Evaluate the iterated integral
$$\int_0^2 \int_0^1 \frac{x}{1+xy}\, dx dy \ .$$

2. Let f be a function defined in the square $R = [0,1] \times [0,1]$, $f(x,y) = -1$ for $x < y$ and $f(x,y) = 5$ for $x \geq y$. Evaluate
$$\iint_R f(x,y)\, dA \ .$$