1. Compute the average value of $f(x, y) = xy$ over the square $[0, 1] \times [0, 1]$. Recall that the mean value theorem for integrals says that (since $f$ is continues and the region is closed, bounded and connected) that this average value will be achieved somewhere in the square. Using a complete sentence, describe which point(s) achieve this mean value.

2. We want to compute $\iint_D g(x, y) \, dA$ where $D$ is a triangle in the plane with vertices (1, 0), (4, 4) and (8, 4). Express this as an iterated integral in both orders.