1. Set up the iterated integrals to find $\int \int \int_E f(x, y, z) dV$ for the following settings of $f$ and $E$:

(a) $f(x, y, z) = 6xy$ and $E$ is the region bounded above by the plane $z = 1 + x + y$ and lies above the region in the $xy$-plane defined by inequalities $y \leq \sqrt{x}$, $y \geq 0$, and $x \leq 1$.

(b) $f(x, y, z) = x^2 e^y$ and $E$ is bounded by the parabolic cylinder $z = 1 - y^2$ and the planes $z = 0, x = 1$ and $x = -1$.

(c) $f(x, y, z) = z$ and $E$ is bounded by the cylinder $y^2 + z^2 = 9$, the planes $x = 0, y = 3x$, and $z = 0$, and is a subset of $\{(x, y, z)|x \geq 0, y \geq 0, z \geq 0\}$.

(d) $f(x, y, z) = x$ and $E$ is bounded by the paraboloid $x = 4y^2 + 4z^2$ and the plane $x = 4$.

2. Now evaluate the integrals from part 1.