

1. Evaluate $\int_0^1 \int_y^1 e^{x^2} dx dy$ *HINT: Reverse the order of integration.*
2. Find the volume of the region under the graph of $z = x + y$ and above the region $y^2 \leq x$, $0 \leq y \leq 9$.
3. Let W be the solid cone bounded by $z = \sqrt{x^2 + y^2}$ and $z = 2$. For each integral below, decide *without calculating its value* whether the integral is positive, negative, or zero.
 - (a) $\int_W (z - \sqrt{x^2 + y^2}) dV$
 - (b) $\int_W y dV$