1) Evaluate $\int_0^{2\sqrt{\ln 3}} \int_{y/2}^{\sqrt{\ln 3}} e^{x^2} \, dx \, dy$.

2) Find the average height of the paraboloid $z = x^2 + y^2$ over the square $0 \leq x \leq 2, \ 0 \leq y \leq 2$.

1) Evaluate $\int_0^2 \int_0^{4-x^2} \frac{xe^{2y}}{4-y} \, dy \, dx$.

2) Find the average value of $f(x,y) = 1/(xy)$ over the square $\ln 2 \le x \le 2\ln 2$, $\ln 2 \le y \le 2\ln 2$.