Let us employ the stochastic simulation to search for the maximal $\overline{f}$ such that

$$\Pr\left\{\xi_1 + \xi_2^2 + \xi_3^3 \geq \overline{f}\right\} \geq 0.8$$

where ξ_1 is an exponentially distributed variable $\mathcal{EXP}(1)$, ξ_2 a normally distributed variable $\mathcal{N}(2,1)$, and ξ_3 a uniformly distributed variable $\mathcal{U}(0,3)$. A run of stochastic simulation with 3000 cycles shows that $\overline{f} = 4.93$.