2) $\begin{cases} p(r=\frac{1}{\sqrt{2}}) = 0{,}15 \\ p(r=1) = 0{,}7 \\ p(r=\sqrt{2}) = 0{,}15 \end{cases}$

$\bar{P}_e = \int_0^{\infty} p(r) \cdot P(e/r)\, dr$ Para VA continua

$P_e = \sum_q p(r)\, P(e/r)$ Para VA discreta

$\xi = \frac{3}{16-1} = \frac{1}{5} = 0{,}2$

$M = \frac{4(\sqrt{16}-1)}{4} = 3$

$E/N = 20^{+\frac{23}{10}} = 10^{2{,}3} \times 199{,}52$

$p(e/r) = M\, Q\left(\sqrt{r^2 \xi \frac{E}{N}}\right)$

$p(e/r)_{1/\sqrt{2}} = 3\, Q\left(\sqrt{\left(\frac{1}{\sqrt{2}}\right)^2 \cdot 0{,}2 \times 199{,}52}\right) = 3\, Q(4{,}466607)$

$\simeq 1{,}19 \cdot 10^{-5}$

$p(e/r)_1 = 4 \cdot 10^{-10}$

$p(e/r)_{\sqrt{2}} = 6 \cdot 10^{-19}$

$\bar{P}_e = 0{,}15 \cdot 1{,}19 \cdot 10^{-5} + 0{,}7 \cdot 10^{-10} + 0{,}15 \cdot 10^{-19}$

$\bar{P}_e \simeq 1{,}785 \cdot 10^{-6}$