Transformation: $u = \dfrac{\bar{x} - \mu}{\sigma / \sqrt{n}}$ (2)

$k = 4$

Stichproben-Varianz: $s^2 = \dfrac{1}{n-1} \sum_{i=1}^{k} (x_i - \bar{x})^2$ (16.6) S.184

$= \dfrac{1}{99} \left[(4{,}20 - \bar{x})^2 + (4{,}21 - \bar{x})^2 + (4{,}22 - \bar{x})^2 + (4{,}23 - \bar{x})^2 \right]$

$= 5{,}065 \times 10^{-6}$

$\Rightarrow s = 0{,}00225$

$P\left(\bar{x} - u_{1-\frac{\alpha}{2}} \cdot \dfrac{\sigma_x}{\sqrt{n}} \leq \mu \leq \bar{x} + u_{1-\frac{\alpha}{2}} \cdot \dfrac{\sigma_x}{\sqrt{n}}\right) = 1 - \alpha$

$\left[\bar{x} - u_{1-\frac{\alpha}{2}} \dfrac{\sigma_x}{\sqrt{n}} , \bar{x} + u_{1-\frac{\alpha}{2}} \cdot \dfrac{\sigma_x}{\sqrt{n}} \right]$

$= \left[4{,}2144 - 2{,}58 \cdot \dfrac{0{,}00225}{\sqrt{100}} , 4{,}2144 + 2{,}58 \cdot \dfrac{0{,}00225}{\sqrt{100}} \right]$

$= \left[4{,}2138 , 4{,}2149 \right] \not\leq 4{,}21$

$4{,}21 \notin \left[4{,}2138 , 4{,}2149 \right]$