

$$\begin{aligned}
n &= 325 \quad df = 325 - 1 = 324 \quad \bar{X} = 75.3 \quad s = 12.8 \quad \alpha = 0.2\% \quad \alpha/2 = 0.1\% = 0.001 \\
t_{\alpha/2, df} &= t_{0.001, 324} = 3.1161 \quad C.I. = (\bar{X} \pm t_{\alpha/2} \frac{s}{\sqrt{n}}) = (75.3 \pm 3.1161 \cdot \frac{12.8}{\sqrt{325}}) \\
&= (75.3 \pm 2.2125) = (73.0875, 77.5125) \quad C.I. \approx (73.09, 77.51) \quad \alpha = 5\% \quad \alpha/2 = 2.5\% \\
Z_{\alpha/2} &= 1.96 = 0.025 \quad d = 3\% \quad d = 0.03 \quad n \geq \frac{Z_{\alpha/2}^2}{4d^2} = \frac{(1.96)^2}{4(0.03)^2} \quad n \geq 1067.1 \quad n = 1068
\end{aligned}$$