8.1) $\mu_0 = 6\%$

a) $\alpha = 10\%$ $\quad \frac{\bar{x}-\mu_0}{\frac{\sigma}{\sqrt{n}}} \sim N(0,1)$ $\quad R_{C_{10\%}} = \{ z \in \mathbb{R} : z < -c \vee z > c \}$

$c = \phi^{-1}(1-\frac{\alpha}{2}) = \phi^{-1}(0.95) = 1,6449$

$z = \frac{\bar{x}-\mu_0}{\frac{\sigma}{\sqrt{n}}} = -0.40824$ $\quad R_{C_{10\%}} =]-\infty ; -1,6449] \cup [1,6449 ; +\infty[$

Está no intervalo!

b) $\phi(z) = 0.3409 \Rightarrow 2(0.3409) = 68.18\% > 10\% \Rightarrow$ não rejeitar

8.2) a) $\bar{x} = 15.94$; Pouca

b) $z_{H_0} = \frac{\bar{x}-\mu}{\frac{\sigma}{\sqrt{n}}} \sim N(0,1)$ $\quad z_{H_0} = -0.4648$

$\phi(z) = 0.2946 \Rightarrow 58.92\% = \text{valor-p}$

A máquina não aparenta estar bem calibrada

8.3) $p = 0.1$

$E(x) = \frac{1}{0.1} = 10$

$\text{Var}(x) = \frac{1-0.1}{0.1^2} = 90$

$z = \frac{\bar{x}-10}{\sqrt{\frac{90}{200}}} = -14.7282$

$\bar{x} = \frac{24}{200}$

$\phi(-14.7282) \approx 0$ Logo este teste é

já que o valor-p não $\approx 0\%$

8.4) $\mu = \sigma^2 = 1$

$\frac{\bar{x}-\mu}{S/\sqrt{n}} \overset{a}{\sim} N(0,1)$

$\bar{x} = \frac{0 \times 185 + 1 \times 180 + 2 \times 95 + 3 \times 30 + 4 \times 10}{500} = 1$

$z_{H_0} = 0 \overset{a}{\sim} N(0,1)$ $\quad RC_{5\%} =]-\infty ; -1.96] \cup [1.96 ; +\infty[$

$z_{H_0} \notin RC_{5\%} \Rightarrow$ aceitar H_0

0% -> valor-p

$-4 \rightarrow \phi(-4) = 32 \times 10^{-6}$ $\rightarrow$ valor-p $= 0.0064\%$

$2 \rightarrow \phi(2) = 0.9772$ $\rightarrow$ valor-p $= 2.28\%$

valor-p $\Rightarrow [0.0064\% ; 2.28\%]$

8.5) $\sigma = \mu = \frac{1}{\lambda}$

$\sigma^2 = \frac{1}{\lambda^2}$

$z_{H_0} = \frac{[30,60] - 50}{8} = [-4,2]$