

3

$$\begin{aligned} \mu &= 100 \text{ KB/s} \\ \sigma &= 9 \text{ KB/s} \\ n &= 10 \end{aligned}$$

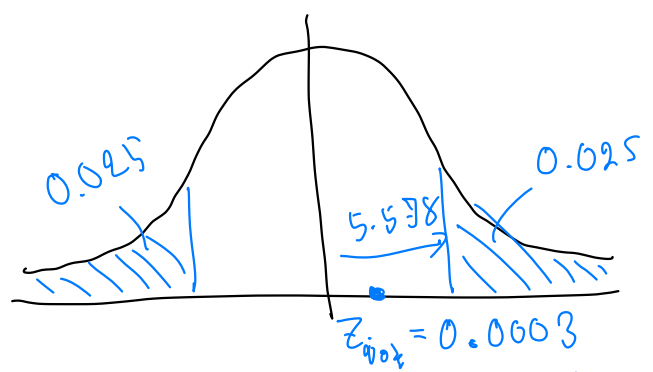
880 760 840 864 888 894 832 808  
896 872 (66/s)

$$\begin{aligned} \bar{x} &= \frac{\sum(x)}{n} \\ &= 105.8 \end{aligned}$$

✗

$$\begin{aligned} E &= Z_{\frac{\alpha}{2}} \left( \frac{\sigma}{\sqrt{n}} \right) \\ &= 1.96 \left( \frac{9}{\sqrt{10}} \right) \\ &= 5.598 \end{aligned}$$

$H_0: \mu = 100 \text{ KB/s}$   
 $H_1: \mu \neq 100 \text{ KB/s}$   
alpha = 5%



$$\begin{aligned} S &= \sqrt{\frac{1}{n-1} \sum_{i=1}^n (x_i - \bar{x})^2} \\ &= \sqrt{\frac{1}{10-1} \left( \sum_{i=1}^{10} (x_i - 105.8)^2 \right)} \\ &= 5.2662 \end{aligned}$$

$$\begin{aligned} Z_{\text{test}} &= \frac{\bar{x} - \mu}{\frac{s}{\sqrt{n}}} \\ &= \frac{105.8 - 100}{\left( \frac{5.2662}{\sqrt{10}} \right)} \\ &= \frac{5.8}{\left( \frac{5.2662}{3.1622} \right)} \\ &= \frac{5.8}{1.6653} \\ &= 3.4828 \end{aligned}$$

$$\begin{aligned} &= P(\bar{x} < 94.4011) + P(\bar{x} > 105.1989) \\ &= \frac{105.598 - 100}{5.51} \end{aligned}$$

