

$$3) \quad 0.05 > 0.0228$$

↓

$H_0$ :  $\mu = 85$  vs  $H_1$ :  $\mu > 85$  (one-tailed test)  
 5% significance level

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$$Z_{1-\alpha} = Z_{1-0.05} = Z_{0.95} = 1.645$$

$$\beta = P\left(Z_{\bar{x}} < \frac{80 + 1.645 \cdot \frac{20}{\sqrt{100}} - 85}{\frac{20}{\sqrt{100}}}\right) = 0.172$$

$$n=100, \quad \sigma=0.05$$

to find the  $\beta$