

Some Solutions for Test #3

- 1.) True (p.261)
- 2) $n = \frac{(1.645)(1400)^2}{(300)^2} \approx 58.93$ (p.285)
- 3) 1.725 (p.568, Table IV)
- 4) 2.764 (p.568, Table IV)
- 5) Increase n , decrease $(1-\alpha)\%$ (p.258, p.261)
- 6) We are 98% confident that μ is in the CI (p.260)
- 7) 98% CI $\approx 14.7 \pm 2.326 \left(\frac{2.2}{\sqrt{250}} \right)$ (p.259)
- 8) 90% CI $\approx 12 \pm 1.753 \left(\frac{2.6}{\sqrt{16}} \right)$ (p.266)
- 9) In repeated sampling ... (p.258)
- 10) $z_{\frac{0.05}{2}} = 1.960$ (p.567, Table III)
- 11) 90% CI (p.251, Table 5.2)
- 12) 99% CI $\approx 15.8 \pm 2.575 \left(\frac{5}{6} \right)$ (p.251, Table 5.2)
- 13) A parameter is a numerical measure ... (p.256, Defn 5.1)
- 14) $P(Z < -1.3774 \text{ or } Z > 1.3774) = 2 P(Z > 1.3774) \approx 2(0.5 - 0.416) \approx 0.168$ (Table III)
- 15) $H_0: \mu = 10$ vs $H_a: \mu \neq 10$
- 16) p-value $\approx 0.000604 < \alpha = 0.05 \Rightarrow$ Reject H_0
- 17) Reject H_0 if $Z < -1.645$
- 18) $H_0: \mu = 34$ vs $H_a: \mu > 34$

2.19
19) test statistic (p. 302)

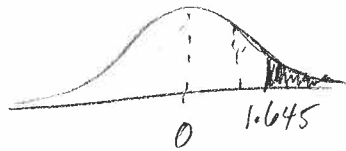
20) A type I error (p. 305)

21) $H_0: \mu = 77$

$H_a: \mu > 77$

We employ a right-tailed test

Rejection Region: $Z > 1.645$



test-statistic: $Z = \frac{79.98 - 77}{\left(\frac{12.34}{\sqrt{50}}\right)} \approx 1.708$

p-value: $p \approx (0.5 - 0.4562) \approx 0.044$

We reject H_0 at the $\alpha = 0.05$ level of significance.
Accept the claim that the mean test score exceeds 77.