STAT230 - McClave *et al.*, - Answers - Chapters 4 and 5

Note that these are bare answers. What you present as homework must have problem statements or otherwise be self-contained and must have explanations.

There is a reward for finding misprints in these solutions.

4.148

a. $\mu_{\bar{x}} = \mu = 20, \quad \sigma_{\bar{x}} = \sigma/\sqrt{n} = 16/\sqrt{64} = 2$

b. By the Central Limit Theorem, the distribution is approximately normal. In order for it to apply, recall that n must be sufficiently large. Here, it is. Why?

c.

$$\bar{z} = \frac{\bar{x} - \mu_{\bar{x}}}{\sigma_{\bar{x}}} = \frac{15.5 - 20}{2} = -2.25.$$

d.

$$\bar{z} = \frac{\bar{x} - \mu_{\bar{x}}}{\sigma_{\bar{x}}} = \frac{23 - 20}{2} = 1.50.$$

5.10

a. 19.3.

b. 19.3 ± 3.44.

5.12

a. 74.97.

b. $(68.24, 81.70)$.