Homework Solutions
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Exercise 5

This exercise says to perform the test. Therefore, we must show all seven steps.

1. Let μ be the mean waiting time to be seated. The hypotheses are

$$H_0: \quad \mu = 60$$
$$H_1: \quad \mu < 60$$

2. $\alpha = 0.10$

3. The test statistic is

$$z = \frac{\overline{x} - \mu_0}{\sigma/\sqrt{n}}.$$

4. The value of the test statistic is

$$z = \frac{50 - 60}{20/\sqrt{25}}$$
$$= -\frac{10}{4}$$
$$= -2.5.$$

5. The p-value is

$$\texttt{normalcdf(-E99,-2.5)} = 0.0062.$$

6. Reject H_0 (because the p-value is less than α).

7. The mean waiting time to be seated is less than one hour.