These are some of the errors/typos we have found in the book:

p.50, 4th line from bottom: 0.2646.

p.53, Example 1.22: "... a sample of 100 ..." not 25.

p.121, Defn. Either $s_e = \sqrt{\dfrac{SSResid}{n-2}}$ or $s_e^2 = \dfrac{SSResid}{n-2}$.

p.168: $n = \dfrac{1}{\left(\dfrac{B}{1.96\,\sigma}\right)^2 + \dfrac{1}{N}}$

p.171: $S_p \cong$ .... check lecture notes.

p.352: See next page, below.

p.506, blue box: "... $H_a: \rho \neq 0$ (linear association ...)" no "no".

Values of z at least as contradictory to H_0 as this are those even smaller than -6.17 (those resulting from $\bar{x}$ values that are even farther below 15 than 11.3). Thus

$$\begin{aligned} P\text{-value} &= P(z < -6.17 \text{ when } H_0 \text{ is true}) \\ &= \text{area under the standard normal } (z) \text{ curve to the left of } -6.17 \\ &\approx 0 \end{aligned}$$

There is virtually no chance of seeing a z value this extreme as a result of chance variation alone when H_0 is true. If a significance level of .01 is used, then

$$P\text{-value} \approx 0 \leq .01 = \alpha$$

so the null hypothesis should be rejected. Because the P-value is so small, the null hypothesis would in fact be rejected at *any* reasonable significance level, even .001 or smaller. The data is much more consistent with the conclusion that true average intake is in fact smaller than the RDA.

Let μ_0 denote the value of μ asserted by the null hypothesis ($\mu_0 = 15$ in Example 8.4). The test statistic for testing hypotheses about μ when the sample size n is large is

$$z = \frac{\bar{x} - \mu_0}{s/\sqrt{n}}$$

When H_0 is true, this test statistic will have approximately a standard normal distribution (this will be true for *any* test statistic labeled z in this book). The P-value is then a z-curve area that depends on the inequality in H_0: → Ha

Inequality in H_0 → Ha	P-value	Type of test
$>$	Area to the right of the calculated z	Upper-tailed
$<$	Area to the left of the calculated z	Lower-tailed
$\neq$	2(tail area captured by calculated z)	Two-tailed

These three cases are illustrated in Figure 8.2.

As an example of the latter case, suppose that we are testing

$$H_0\colon \mu = .5 \quad \text{versus} \quad H_a\colon \mu \neq .5$$

where μ denotes true average bearing diameter. The large-sample test statistic is

$$z = \frac{\bar{x} - .5}{s/\sqrt{n}}$$

In this situation, values of $\bar{x}$ either much larger or much smaller than .5, corresponding to z values far from zero in *either* direction, are inconsistent with H_0 and give support to H_a. If, for example, $z = -2.76$, then

$$\begin{aligned} P\text{-value} = P(&\text{observing a } z \text{ value at least as contradictory to } H_0 \text{ as } -2.76 \\ &\text{when } H_0 \text{ is true}) \end{aligned}$$

Typos in the solns:

Chapter

1.11 b (page 584): 0.489, 0.362; ....

problem

not 0.149.

1.15 b:

0 - <50	8	...
50 - <100	13	...
...		

not 7

not 14.

1.19: d. 4.2 (not 5.8)

1.37: b. 0.6892 c. 39.96

2.9: c. $0.66\overline{6}$, 0.707

2.65: a. 0.933 b. 0.6086

5.11: $= 5(.01) = 0.05$

not 10.

5.15 : a) = 0.004 + 0.594 = 0.598 or 59.8%

b) = 0.594/0.598 = 0.993 or 99.3%

5.51 c. 28.71 hours

7.33 5.882, yes.

8.1 f. No.

8.73 $t = -1.8$, ..., P-value = 0.073.

8.79 $$z = \frac{\cdots}{\sqrt{16\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$