Homework Solutions
Chapter 11 – Page 713

Exercise 26

(a) Ideally, each sample would be a simple random sample. That would be difficult to do in real time, as the patients arrived. However, one could use the office's records to select a simple random sample. One important factor would be the serious of the illness.

(b) Use the formula for the pooled estimate s_p.

$$\begin{aligned} s_p &= \sqrt{\frac{(n_1-1)s_1^2 + (n_2-1)s_2^2}{n_1+n_2-2}} \\ &= \sqrt{\frac{14 \cdot 3.248^2 + 14 \cdot 2.915^2}{28}} \\ &= 3.086. \end{aligned}$$

(c) Skip

(d) Run the test:

1. The hypotheses are

   $H_0: \quad \mu_1 = \mu_2$
   $H_1: \quad \mu_1 \neq \mu_2$
2. $\alpha = 0.10$.
3. $t = \dfrac{(\overline{x}_1 - \overline{x}_2) - 0}{s_p\sqrt{\frac{1}{n_1}+]frac1n_2}}$.
4. $$\begin{aligned} t &= \frac{20.867 - 19.067}{3.086\sqrt{\frac{1}{15}+\frac{1}{15}}} \\ &= \frac{1.8}{1.127} \\ &= 1.597. \end{aligned}$$
5. p-value $= 2 \times$ `tcdf(1.597,E99,28)` $= 0.1214$.
6. Accept H_0.
7. There is no difference in the average fees between the two offices.

You could use `2-SampTTest` to compute the values in Steps 4 and 5.