

Section 9.4 — Examples

Exercise 9.21: Suppose that we would like to show that the use of vitamin C reduces the mean time required to recover from a common cold. 35 people take no vitamin supplement and have a mean time of 6.9 days with $s_1 = 2.9$, and 35 who take 4 mg of vitamin C have a mean time of 5.8 days with $s_2 = 1.2$.

Exercise 9.24: Suppose we would like to know whether there is a difference in starting salary for CE graduates and CS graduates. 50 CE graduates are sampled and produce a mean starting salary of \$53,659 with $s_{CE} = 2225$, and 50 CS graduates are sampled and produce a mean starting salary of \$51,042 with $s_{CS} = 2375$.

1. State the null and alternative hypotheses.
2. Calculate the value of the test statistic.
3. Calculate the p -value of the test statistic.
4. Calculate the critical value for rejecting the null hypothesis at 5% significance.
5. Can we reject the null hypothesis at 5% significance? Can we reject at 1% significance?