Worksheet 07 (Solutions)

1. Consider a sample of size 6 with the following values: 0, 1, 5, 7, 12. What are the sample mean and sample variance $\bar{X}$ and S_X^2?

Solution: The sample mean is 5 and the sample variance is 23.5.

2. Consider collecting data from two populations. We collect $n = 25$ observations from the first group, with sample mean 7 and sample variance 9. From the second group, we have $m = 30$ samples and a mean of 4 with a sample variance of 4. What is the pooled variance S_p^2?

Solution: The sample mean is 5 and the sample variance is 23.5.

3. Using the data from above, construct a 99% confidence interval for the difference in the means. You can use the fact that $t_{0.99/2}(54) = 2.67$.

Solution: NA

4. Using the data from above, run a hypothesis test to see if the samples have the same variance with a 99% confidence level. Use the fact that $f_{0.99/2}(24, 29) = 2.76$ and $f_{1-0.99/2}(24, 29) = 0.347$.

Solution: NA