MATH 3070: Statistical Report Assignment No.3

1. **Sample assignment problem.** Report your findings regarding “Vitamin A intake and BMR” (Textbook dataset from Ekstrom and Sorensen: vita2.csv. Warning: It is a large data set, and it slows you down.).

Data set for each problem is available at e-Statistics. Go under the title “Data in Statistical Studies” → “Textbook Data Sets.”

*Study Questions: Is there any difference in basal metabolic rate (BMR) between men and women?*

* 1. Compute a 95% confidence interval for the difference in expected BMR between men and women by assuming that the standard deviations are different for men and women.
	2. Compute a 95% confidence interval for the difference in expected BMR by assuming that the standard deviations are the same for men and women. Discuss how different the result becomes from (a)?
	3. Which of the results, (a) or (b), is more conservative? Explain it in your conclusion.
1. In an experiment to test ginkgo bloba, subjects were assigned randomly to take ginkgo biloba supplements or a placebo. Their memory was tested and measured by subjective ratings to see whether it improved. Higher scores indicate more enhanced.

The data set is available at e-Statistics. Go under the title “Data and Story Library” → “Memory Enhancement.”

*Study Questions: Does Gingko make any difference in improving their memory?*

* 1. State null and alternative hypothesis explicitly.
	2. Read “When to assume equal SD’s?” in lecture note #5, and justify your choice of test procedure.
	3. If you change the assumption on standard deviations, does your conclusion change?