Data Set 1

1. **Basic statistics**

   For the SYS data (Systolic blood pressure).
   
   (a) The standard deviation is __________.

   (b) The standard error of the mean is __________.

   (c) Draw a Frequency Histogram of the data.

   (d) The 95% confidence interval for the mean is (__________, __________)

2. **Hypothesis tests (one sample)**

   (a) Test the hypothesis that $\mu = 125$ (alternative hypothesis $\mu \geq 125$)

   
   \[ P\text{-value: __________} \quad \text{Conclusion: ________________} \]

   (b) Test the hypothesis that $\mu = 130$ (alternative hypothesis $\mu \neq 130$)

   \[ P\text{-value __________} \quad \text{Conclusion: ________________} \]

3. **Matched pairs**

   (a) Create a matched pair of data.

   (b) Find the 95% confidence interval for the differences between the matched pairs.

   (c) Is there a statistical difference between the two samples at the .05 significance level?

4. **Power curves and sample size.**

   Differences 3, power values .8, standard deviation 1, significance level .01

   (a) Sketch the power curve __________.

   Determine the power for different sample sizes.