

# [And data interpretation](https://assignbuster.com/and-data-interpretation/)

[Science](https://assignbuster.com/essay-subjects/science/), [Biology](https://assignbuster.com/essay-subjects/science/biology/)

4BBY1060: Statistics and Data Interpretation This work is worth 10% of the module marks Using MS Word, or clear hand-writing, enter your answers to questions in the spaces provided. Insert all tables at the end of the document, making sure they are properly labelled and have appropriate legends. When complete, print the coursework and attach your CYO coversheet to the front (see the module booklet, p8 if you do not know how to do this). Also attach your hand-drawn histogram at the back, stapling everything together. The submission deadline is 2: 00 PM, 16th March.
Guidance on the use of Excel can be found on the 4BBY1060 coursework tab.

Part A (cardiovascular data) [total 20 marks]:
The data is provided separately as an Excel spreadsheet entitled ‘ cardiovascular data’ on the 4BBY1060 module website ‘ coursework’ tab. It will show: systolic BP and diastolic BP taken from the same set of subjects either while supine or standing.
Answer all parts of the question
1). What is the formula for calculating mean arterial blood pressure (MABP)?
[1 mark]
2). Using Excel, calculate three new columns, giving for each subject their MABP supine and standing and their increase in MABP when standing rather than lying supine. From the new columns, again using Excel, calculate, for the whole class, and for males and females separately, the mean, SD and SEM for MABP for supine and standing positions and for the increase in MABP. You do not need to print your columns of raw data.
Present all these summaries, including the numbers of subjects and units of measurement, in a single table. It should also include a title and a legend which states briefly how the experimental data were obtained (i. e. summarises what was done in the practical). Round the values up to an appropriate number of decimal places.
[4 marks]
WHOLE CLASS
Supine systolic
Supine diastolic
Standing systolic
Standing Diastolic
MABP Supine
MABP standing
MABP increase
MEAN
119. 8064516
69. 6344086
125. 4086022
78. 83870968
86. 35842294
94. 36200717
8. 003584
SD
13. 55284188
9. 485440727
15. 28585348
11. 05646606
9. 401566906
11. 0547229
7. 232925
SEM
1. 405364236
0. 983594384
1. 585069167
1. 146502122
0. 974897074
1. 146321364
0. 750019
FEMALE
MEAN
114. 36
69. 34
117. 14
76. 3
84. 34666667
89. 91333333
5. 566667
STDEV
10. 94841336
9. 560996447
11. 29025225
9. 729504885
9. 011194852
9. 090078317
6. 144979
SEM
1. 548339466
1. 352129085
1. 596682786
1. 375959776
1. 274375397
1. 285531204
0. 869031
FEMALE
MEAN
126. 1395349
69. 97674419
135. 0232558
81. 79069767
88. 69767442
99. 53488372
10. 83721
SD
13. 64268755
9. 498090966
13. 67738553
11. 86342547
9. 405282191
10. 96968877
7. 433078
SEM
2. 080490347
1. 448445293
2. 085781739
1. 809155423
1. 434292088
1. 672861854
1. 133534
3). Complement the numerical statistics with a graphical display: From the MABP increase values, construct a grouped frequency table for the whole class, showing the frequency and percentage frequency at 5 mmHg intervals. Remember that % values should add up to 100. Draw by hand the histogram. It is normal in biosciences for these to be plotted as percentage frequency, NOT % freq density. Remember to label the axes and intervals and include a title or legend so that the graph is readily understandable. [4 marks]
Interval
Frequency
cumulative frequency
0