

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

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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