**MA4505 – Correlation – Worked Example with R**

* First we create the data, and then run the procedure.

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| Int=c(2.1,5.0,9.0,12.6,17.3,21.0,24.7)  Conc=c(0,2,4,6,8,10,12)  cor.test(Int,Conc) |

* This is the resulting output

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| --- |
| > cor.test(Int,Conc)  Pearson's product-moment correlation  data: Int and Conc  t = 47.1967, df = 5, p-value = 8.066e-08  alternative hypothesis: true correlation is not equal to 0  95 percent confidence interval:  0.9920730 0.9998421  sample estimates:  cor  0.9988796 |

Remark upon the following outputs:

* The correlation coefficient: **0.9988796**
* The 95% confidence interval for the correlation coefficient estimate: **(0.9920730,0.9998421)**
* The Null Hypothesis is that true correlation between the population of values for both variables is not equal to 0.
* The Alternative Hypothesis is that the true correlation is not equal to zero.
* The p-value is **8.066e-08**
* This is a **highly significant result.**
* Conclusion - We reject the null hypothesis