**AS Level Statistics 1**

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|  | **What You Need To Know** | pe03020_[1] | pe03018_[1] | pe03019_[1] |
| 1. Numerical Measures | * Standard deviation and variance calculated on ungrouped and grouped data. Including knowledge of unbiased estimators and its effects on the divisor. * Linear Scaling * Choice of numerical measures (mean, median, mode, range and interquartile range) in appropriate contexts. |  |  |  |
| 1. Probability | * Elementary probability; the concept of a random event and its probability. * Addition laws of probability and mutually exclusive events. * Multiplication law of probability and conditional probability. * Independent events. * Application of probability laws. |  |  |  |
| 1. Binomial Distribution | * Discrete random variables * Conditions of application of a binomial distribution * Calculating the probabilities using formula. * Calculating the probabilities using the tables * Mean variance and standard deviation of a binomial distribution. |  |  |  |
| 1. Normal Distribution | * Continuous random variables. * Properties of normal distributions. Looking at the shape, symmetry and area properties of normal graphs. * Calculation of probabilities * Mean variance and standard deviation of a normal distribution. |  |  |  |
| 1. Estimation | * Population and sample, including the terms ‘parameter’ and ‘statistic’ * Unbiased estimators of a population mean and variance. * The sampling distribution of the mean of a random sample from a normal distribution. * A normal distribution as an approximate to the sampling distribution of the mean of a large sample from any distribution. Including the Central Limit Theorem. * Confidence intervals for the mean of a normal distribution with know variance. * Confidence intervals for the mean of a distribution using normal approximation. * Inferences from confidence intervals. |  |  |  |
| 1. Correlation and Regression | * Calculation and interpretation of the product moment correlation coefficient. * Identification of response (dependant) and explanatory (independent) variable in regression. * Calculating the least square regression lines with 1 explanatory variable. Scatter diagrams and drawing regressions lines thereon. * Calculation of residuals using:     To check model and identify outliers.   * Linear Scaling |  |  |  |