Tutorial Test 1 Wednesday September 28

Tutorial Test 1 is to be written in your scheduled tutorial time. THERE ARE NO EXCEPTIONS.

Seating is predetermined so please check your seat assignment at https://odyssey.uwaterloo.ca/teaching/schedule **after 1pm on Friday September 23**.

Bring your Watcard and a ruler. Only Pink Tie or Blue Goggles Calculators may be used.

You may bring one (1) single-sided, letter sized (8.5 x 11 inches), handwritten page of notes to the exam (no photocopies).

For efficiency of marking your final answers must be given to 3 decimal places.To avoid round off errors carry as many decimal places as possible while making your calculations.

Tutorial Test 1 covers the material in Chapter 1 and the material in Section 2.1 which is a review of STAT 230 material.

In preparation for the test you should do Chapter 1 Problems: 1-20.

There will also be multiple choice or short answer questions on the statistical software R.

To aid you in creating your sheet of notes here is a list of the ideas and definitions you should know for Tutorial Test 1:

Empirical Studies (Chapter 1)

- units, populations and processes (page 1)
- variate and types of variates (page 3)
- response versus explanatory variates (page 24)
- attributes (apge 4)
- types of studies (sample surveys, observational studies, experimental studies)

Numerical Summaries (Section 1.3)

- measures of location: sample mean, median, mode (pages 7-8)
- measures of variability: sample variance, sample standard deviation, range, IQR (page 8 and Definition 3, page 12)
- measures of shape: skewness, kurtosis (page 8)
- sample percentiles and quantiles (Definition 1, page 11)
- lower or first quartile, upper or third quartile (Definition 2, page 11)
- five number summary (Definition 4, page 12)
- numerical summaries for bivariate data: sample correlation (Definition 5, page 14), relative risk (Definition 6, page 15)

Graphical Summaries (Section 1.3)

- relative frequency histograms (page 16)
- empirical cumulative distribution function (page 19)
- boxplots (page 20-21)
- scatterplots (page 21)

Data Analysis and Statistical Models

- descriptive statistics, statistical inference (inductive versus deductive reasoning) (page 25)
- discrete statistical models: Binomial(n,θ), NegativeBinomial(k,θ), Poisson(θ), Geometric(θ)
- continuous statistical models: Exponential(θ), G(μ,σ), Multinomial$(n,\theta_1,\theta_2,\ldots,\theta_k)$ (pages 45-46)