

Problem Sheet 9 annex

Remember: when online, you can access the Statistics 1 data sets from an **R** console by typing

```
load(url("http://www.stats.bris.ac.uk/%7Emapjg/Teach/Stats1/stats1.RData"))
```

Most of the questions on Sheet 9 require access to **R** (or the use of statistical tables) for obtaining probability or quantile values from standard distributions like the Normal or χ^2 . Use of tables is not taught in the course, and in the exam, tables are not needed and will not be provided.

All of the standard distribution probability and quantile values needed can be found in the **R** output below, so you can use appropriately selected numbers to avoid needing to run **R**.

```
> z
[1] 0.84162 0.95000 0.99000 1.28155 1.64485 1.95996 2.57583 2.84400
> pnorm(z)
[1] 0.80000 0.82894 0.83891 0.90000 0.95000 0.97500 0.99500 0.99777

> qchisq(c(.025,.05,.1,.9,.95,.975),7)
[1] 1.6899 2.1673 2.8331 12.0170 14.0671 16.0128
> qchisq(c(.025,.05,.1,.9,.95,.975),8)
[1] 2.1797 2.7326 3.4895 13.3616 15.5073 17.5345
> qchisq(c(.025,.05,.1,.9,.95,.975),9)
[1] 2.7004 3.3251 4.1682 14.6837 16.9190 19.0228
> qchisq(c(.025,.05,.1,.9,.95,.975),32)
[1] 18.291 20.072 22.271 42.585 46.194 49.480
> qchisq(c(.025,.05,.1,.9,.95,.975),33)
[1] 19.047 20.867 23.110 43.745 47.400 50.725
> qchisq(c(.025,.05,.1,.9,.95,.975),34)
[1] 19.806 21.664 23.952 44.903 48.602 51.966
> qchisq(c(.025,.05,.1,.9,.95,.975),50)
[1] 32.357 34.764 37.689 63.167 67.505 71.420
> qchisq(c(.025,.05,.1,.9,.95,.975),51)
[1] 33.162 35.600 38.560 64.295 68.669 72.616
```