Prof. Andreas Orth
High Integrity Systems, 2nd semester: Data Mining
Assignment 1                                                                week 1
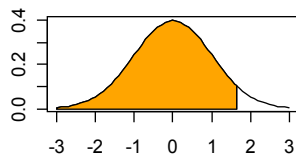
Exercise 1:

Download R from http://cran.r-project.org/ and call it or use it on your lab-computer (it
should be installed there).
Generate the following graph using the commands:



```
plot(x=seq(-3,3,0.1),y=dnorm(seq(-3,3,0.1)),type="l",xlab="",ylab="")
lines(c(1.645,1.645),c(0,dnorm(1.645)))
polygon(x=c(0,1.645,1.645,seq(1.6,-3,-0.1)),
y=c(0,0,dnorm(1.645),dnorm(seq(1.6,-3,-0.1))),col="orange",xlab="",ylab="")
```

Familiarize yourself with the way R deals with distributions (p. 33 in the R-intro.pdf
under help in the R menu).

Then plot the chi²-distribution for df=7 and F-distribution for df1=df2=7:
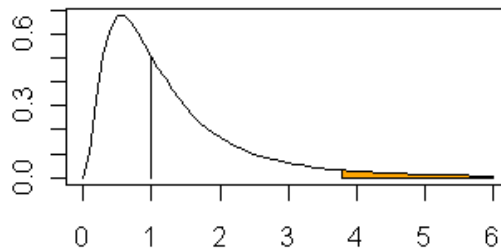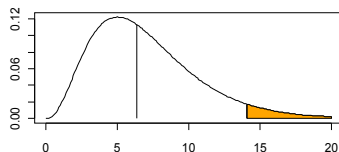


Familiarize yourself with the `seq`-command (p. 8 in the R-Intro) and the way R
differentiates between high level and low commands in graphics (p. 62ff in the R-intro);
`plot` is high level `polygon` is low level.

Exercise 2:
Use R to do the t-test for our favorite data set from last semester -->
Import the data using copy in Open-office and then the command:
>wash<-read.delim("clipboard", dec=",")
`wash` is now a so called data frame with two variables `probe 1` and
`probe 2`.
Type >`help(t.test)` to get information on how to use t-test.

| Probe 1 | Probe 2 |
|---|---|
| 201 | 127 |
| 138 | 60 |
| 132 | 79 |
| 117 | 63 |
| 177 | 105 |
| 168 | 82 |
| 178 | 57 |
| 104 | 72 |