STAT 575
Homework 5 Problems
due Wednesday March 1

2 Problems. Show all work.

The numbers refers to *Cunningham et.al*, if not specified otherwise. Some problems may
have additional parts.

For Problems 1 and 2, include your R code used to make the plots. Please follow the lab
report directions linked off the Homework page.

1. p. 114, 4-4 (a). (Hint: You will have to solve for $c$)
In additition, using R and your answer to 4-4 (a) , make a plot of the the SDF over a
reasonable range of values for $x$. Be sure to give a title to your plot. (For help, see Lab1
Part I and the R code for plotting SDFs, both linked off the course calendar.)

2. p. 77, 3.9 (d). The PDF of the Chi-squared Distribution with $r$ degrees of freedom is
given. We will use R to plot the hazard rate function with $r = 3$ (not $r = 2$). You do not
have to find the equation of the hazard rate function, just make the following 4 plots:

1) Create a sequence of values of $x$ from 0 to 10. Use the R function **dchisq** to plot the
PDF, $f_X(x)$ with $r = 3$. Be sure to give a title to your plot.

2) Create a sequence of values of $x$ from 0 to 10. Use the R function **pchisq** to plot the
CDF, $F_X(x)$ with $r = 3$. Be sure to give a title to your plot.

3) Create a sequence of values of $x$ from 0 to 10. Use R to plot the SDF, $S_X(x)$ with
$r = 3$. Be sure to give a title to your plot.

4) Create a sequence of values of $x$ from 0 to 10. Use R to plot the HRF, $\lambda_X(x)$ with
$r = 3$. Be sure to give a title to your plot.