

Homework # 3 assigned 19 February 2003, due 26 February 2003

Read Chapters 2 and 5 in the text. Then do the following problems. Please use a word processor to type up your solutions. You may handwrite the equations, if you prefer.

For all exercises involving distributions, please plot the cdf's and pmf's or pdf's involved in addition to solving the problem. Comment on what the plots tell you about the distributions. Copy and paste the plots into your solutions. For the normal distribution, the pdf is given by the function **dnorm** and the cdf by the function **pnorm**. For the exponential distribution, the pdf is given by the function **dexp** and the cdf by the function **pexp**. Functions that aren't built-in you will have to write yourself. They can be one line long. For instance, for problem 2.30 you could write a little function called fun:

```
>fun
function(x)
{
  1/(x * (x + 1))
}
```

1. 2.14
2. 2.26
3. 2.30. Plot pmf and cdf for $x=1,2,\dots,10$.
4. 2.42. Plot pdf and cdf.
5. 2.52. Plot pmf.
6. 2.60. Plot pmf. Note that there are only 10 total participants (including you).
7. 2.72. Diagram the situation.
8. 2.80. Plot pdf and cdf. You can solve this problem easily with S-Plus, but please also show how you would do it if you only had the tables in the back of the book.
9. 2.86. Plot the two pdf's.