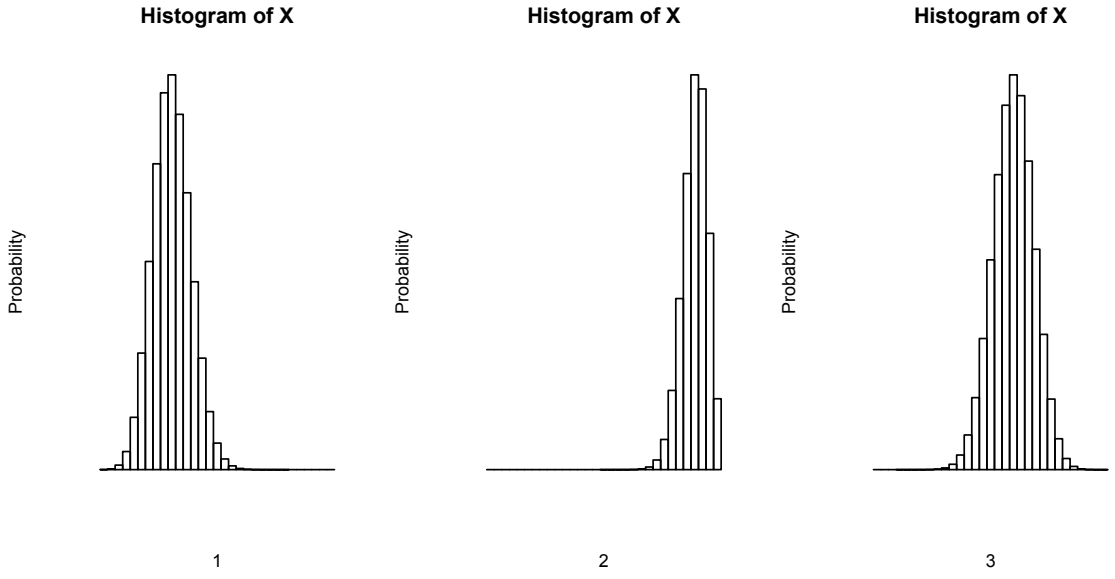
Stat 2 Fall 2010: Homework 8 (Chapters 18) S.M.Stoyanov

Due October 27, 2010, at the **beginning of section**

1. Use R to do the following :
   Toss a biased coin 500 times. Each time, the probability of landing heads is 0.76.
   (a) What is the expected number of heads?
   (b) What is the chance of landing at least 467 heads? (Use the binomial formula, **not** the normal approximation.)
   (c) **Now** use the normal approximation. What do you get? Did you use the continuity correction? If you didn't, try. Does it improve the approximation?
   (d) What is the probability of getting between 360 and 420 heads (inclusive)? (Use the binomial formula.)
   (e) Now use the normal approximation to find this probability. Compare your answer to part (d).
2. 3 biased (not fair) coins are tossed 30 times, and the corresponding probability histograms for the number of heads are shown below. Match the histogram to the coin:



   The coins have $P(H)$ given by:
   (a) 0.9
   (b) 0.6
   (c) 0.3
3. Review problem 6 from chapter 18, page 328.