

1. Generate 625 samples of size 25600 random numbers from  $U(1, 2)$ . For each of these 625 samples calculate the mean.
  - A. Find the simulated probability that the mean is between 1.49 and 1.53 inclusive.
  - B. Find the mean of the means.
  - C. Find the standard deviation of the means.
  - D. Draw the histogram of the means.
2. Generate 625 samples of size 25600 random integers from the set  $\{1, 2, 3, 4, 5, 6, 7, 8, 9, \text{ and } 10\}$ . For each of these 625 samples calculate the mean.
  - a. Find the simulated probability that the mean is between 4.6 and 5.1 exclusive.
  - b. Find the simulated mean of the means.
  - c. Find the simulated standard deviation of the means.
  - d. Draw the histogram of the means.

## Note:

- **The program is due at the beginning of the session on the due date**
- **Use this cover page with your name(s) – At most three students**
- **Use comments in your programs**
- **Each source and output must be clearly marked with the question number**
- **Circle the answers**