**AP Statistics Name:
Special Problem 5 (S2018)**

**Directions**: *This is an individual assignment*. You may use your book and notes but no other outside resources including the internet. Show all your work. Indicate the methods you use, because you will be graded on the correctness of your methods as well as on the accuracy and completeness of your results and explanations.

**Problem**: Suppose a college professor has 30 students in her class. There are 22 females and 8 males. At the start of class on the professor routinely goes over the homework from the previous class. Unbeknownst to the professor, only 4 of the males and 8 of the females have completed the homework assignment. The professor chooses students at random to explain homework problems.

1. What is the probability that a randomly selected student has in fact completed the homework assignment?
2. Are the events “choosing a female” and “choosing a student who completed the homework” independent of each other? Justify your answer.

The professor randomly selects 5 students to explain homework problems.

1. Describe how to use a table of random digits to estimate the probability that 2 or fewer of the 5 randomly selected students completed the assignment.
2. Complete **three** repetitions of your simulation starting with line 102 in the table of random digits below and use the results to estimate the probability described in part (c).

