Chapter 5 FRAPPY!

Directions: Show all your work. Indicate clearly the methods you use, because you will be scored on the correctness of your methods as well as on the accuracy and completeness of your results and explanations.

A statistics teacher has 40 students in his class, 23 females and 17 males. At the beginning of class on a Monday, the teacher planned to spend time reviewing an assignment due that day. Unknown to the teacher, only 19 of the females and 11 of the males had completed the assignment. The teacher plans to randomly select students to do problems from the assignment on the whiteboard.

(a) What is the probability that a randomly selected student has completed the assignment?

(b) Are the events "selecting a female" and "selecting a student who completed the assignment" independent? Justify your answer.

Suppose that the teacher randomly selects 4 students to do a problem on the whiteboard and only 2 of the students had completed the assignment.

(c) Describe how to use a table of random digits to estimate the probability that 2 or fewer of the 4 randomly selected students completed the assignment.

(d) Complete three repetitions of your simulation using the random digits below and use the results to estimate the probability described in part (c).

12975 13258 13048 45144 72321 81940 00360 02428

96767 35964 23822 96012 94951 65194 50842 55372

37609 59057 66967 83401 60705 02384 90597 93600