

Statistics
1st Semester Exam Review: Simulations

The chance of contacting strep throat when coming into contact with an infected person is estimated as 0.15. Suppose the four children of a family come into contact with an infected person.

- (a) Describe how you will use a random number table to conduct this simulation.
- (b) Show 7 trials by clearly labeling the random number table given. Specify the outcome for each trial.
- (c) Summarize your results of the simulation.
- (d) What is the probability of two of the children getting the disease?
- (e) What is the probability of at least two of the children getting the disease?

31151 64727 88795 93736 22189 47004

48304 77410 78871 98387 44647 18072

65194 58586 78232 57097 01430 00304

32036 23671 65929 97613 94452 56211

85446 13656 32155 84455 38125 50339

82178 19650 41283 13944 13736 02627

41929 60613 73840 53838 90804 94332

A certain professor has eight keys, but he never recalls which one fits his office door lock. He tries one key at a time, each time choosing one of the keys at random from his pocket. (All the keys look the same but he **does not** put a key back in his pocket once he has tried that key.)

- (a) Describe how you will use a random number table to conduct this simulation.
- (b) Show 7 trials by clearly labeling the random number table given. Specify the outcome for each trial.
- (c) Summarize your results of the simulation.
- (d) What is the probability it will take more than 4 tries to find the right key?

64831 78558 25961 07610 75464 85326

34336 39840 24371 53548 01485 57845

11792 38659 92620 48253 05370 80411

65985 43392 21100 08763 37469 66583

52822 48990 03648 34861 54680 64791

31645 45552 78255 64794 21228 69707

38804 45687 85320 54654 76156 01853

97115 91205 92396 97645 18911 76701

29815 81029 06361 86378 33931 09331