

Homework 01

STAT 509 Statistics for Engineers

Summer 2017 Section 001

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Question 01

There is going to be 2 exams in this course. Each exam resulted in pass (P) or fail then (F).

- Write a set S with all possible outcome. Note that, this set is the sample space.
- The event A denotes passing in both exams. Express A in set notation.
- The event B denotes passing in at least one exams. Express B in set notation.
- Find $A \cup B$ and $A \cap B$.
- Assuming passing and failing are equally likely, find the probability of the event A and B .

Question 02

Conduct a simulation with tossing a “biased” 1000 times. In each toss, the probability to get head is 80%. Generate a plot to demonstrate the change of proportion of heads over time using R (similar to the plot in chapter 2 notes page 9). (Hint: `x <- rbinom(n=1000,size=1,prob=0.8)`).