

Show all work clearly and in order. Justify your answers.

(1) Consider the words MISSISSIPPI MUD

(a) If we rearrange the letters in MISSISSIPPI MUD, how many unique words can be made? (All letters must be used, and any string of letters is a word).

(b) If we choose a word constructed from the above letters at random what is the probability that the two M's appear next to each other?

(c) If we select a word constructed from the above letters at random, what is the probability that it has an M at the beginning, the end, or both?