GNS 104 Assignment

GNS 104 Assignment 1
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1. **what is the overall probability of succeeding at least once in a game of three die rolls?**
   The probability of not rolling a four in any single roll is 5/6 (since there are 5 other possible outcomes on a fair six-sided die).

   Therefore, the probability of not rolling a four in any of the three rolls is (5/6)^3, since these are independent events.

   Thus, the probability of succeeding at least once in a game of three die rolls is:

   1 - (5/6)^3 = 1 - 125/216 = 91/216

   So the overall probability of succeeding at least once in a game of three die rolls is 91/216 or approximately 0.4213.

2. a) The overall probability of obtaining at least one success is not pertinent to Maxi's current situation.

   (b) This is because the previous two rolls do not affect the probability of success in the third roll. The die is fair, and the probability of rolling a four on the third roll is still 1/6, just as it was on the first and second rolls. Each roll of the die is an independent event, and the outcomes of previous rolls do not influence the probability of future rolls.

3. Therefore, the probability that Maxi will end up with the sequence "failure; failure; success" is 25/216 or approximately 0.1157.

$$\frac{5}{6} * \frac{5}{6} * \frac{1}{6} = \frac{25}{216} = 0.116$$