Intermediate 1 **Oct 1, 2023**

Optional Challenge Problems

Problem 1 *Suppose you roll 2 dices at the same time.*

1. *List the number of possible outcomes for a sum of 7.*
2. *Calculate the probability of rolling a 7.*
3. *Similarly, calculate the probability for all numbers from 2 to 12.*
4. *Based on these calculation, do you have a better strategy for playing the Remove-One game that we played in the beginning of the class?*

Problem 2 *Suppose you draw 2 cards at the same time from a deck of 52 cards, (without replacement).*

1. *What's the probability of 2 cards being both hearts.*
2. *What's the probability of 2 cards being the same number (including J, Q, K).*
3. *What's the probability of 2 cards being in different suits and different numbers at the same time?*