

1. How many different varieties of pizza can be made if you have the following options: small, medium, or large; thin or deep dish; and 10 toppings.
2. Three students and six faculty make up a committee to discuss a new policy.
 - How many ways can the nine committee members be lined up?
 - How many lineups are possible if only student or faculty labels are considered?
3. Consider a game of poker with a standard, fair 52 deck of cards. Find the probability of the following hands:
 - Four of a kind (four of the same face value and one different).
 - Full house (a pair and a triple).
 - Three of a kind (three of the same face value and two different values).