

# STAT 320: Principles of Probability

## Unit 4: Conditional Probability & Statistical Independence

United Arab Emirates University

Department of Statistics

# Outline

## 1 Multiplication Principle

# Multiplication Principle

# Permutations

# Combinations

## Binomial and Multinomial Coefficient

# Overview of Counting Principals

## Definition (Multiplication Principle of counting)

*Suppose that two experiments are to be performed. Then if experiment 1 can result in any one of  $m$  possible outcomes and if, for each outcome of experiment 1, there are  $n$  possible outcomes of experiment 2, then together there are  $m \times n$  possible outcomes of the two experiments.*

Questions?