

**UNIVERSITY OF THE WEST INDIES**

**MONA CAMPUS**

**DEPARTMENT OF COMPUTING**

**COMP1210**

**TUTORIAL SET 7**

**Question 1**

A new company with just two employees, Sanchez and Patel, rents a floor of a building with 12 offices. How many ways are there to assign different offices to these two employees?

**Question 2**

Suppose that either a member of the Mathematics faculty or a student who is a Mathematics major is chosen as a representative to a university committee. How many different choices are there for this representative, if there are 37 members of the Mathematics faculty and 83 Mathematics majors and no one is both a faculty member and a student?

### Question 3

How many different strings can be made by reordering the letters of the word SUCCESS?

### Question 4

How many ways are there to distribute hands of 5 cards to each of four players from the standard deck of 52 cards?

### Question 5

What is the **probability** of drawing from a playing card pack of 52 cards, a jack of spade?

### Question 6

From a bag containing 4 white marbles, 3 blue marbles, 2 yellow marbles and 5 red marbles, a marble is drawn and the colour was observed. If it was a blue marble that was drawn and it was not replaced, what is the **probability** that if another marble is drawn then it will be another blue marble?

### Question 7

In a box are 100 discs labelled 1 to 100. What is the **probability** that if a disc is drawn at random, then it will be divisible by 4?

### Question 8

If  $A$  and  $B$  are two events such that

$$p(A) = 0.3, p(B) = 0.1 \text{ and } p(A \cap B) = 0.02.$$

(i) Are events  $A$  and  $B$  mutually exclusive?

(ii) Are events  $A$  and  $B$  independent?

(iii) Find  $p(A \cap B)'$

### Question 9

If

$$p(A) = 0.4, p(B) = 0.7 \text{ and } p(A \cap B) = 0.3.$$

Find:

(i)  $p(A \cup B)$

(ii)  $p[(A \cup B)']$

(iii)  $p(A \cap B')$

(iv)  $p(B \cap A')$

### Question 10

A card is drawn at random from of deck of 52 playing cards. What is the **conditional probability** that the card is a king given that it is a heart?