

GR 11 REVISION: PROBABILITY

Question 1

You throw a die and a coin.

- 1.1 What is the sample space?
- 1.2 What is the probability of getting:
 - 1.2.1 an odd number and a head?
 - 1.2.2 a prime number and a tail?
 - 1.2.3 a number less than five and a head?
 - 1.2.4 an even number and a tail?

Question 2

A group of 150 employees were asked if they use Microsoft Office Excel or OpenOffice.org Calc. Of the group, 72 said they use Excel, 78 said they use Calc, and 15 said they use neither.

- 2.1 Draw a Venn diagram to show this information.
- 2.2 How many employees used:
 - 2.2.1 both programs?
 - 2.2.2 only Calc?
 - 2.2.3 only Excel?
 - 2.2.4 both Excel and Calc?
- 2.3 What is the probability that an employee picked at random will use:
 - 2.3.1 both programs?
 - 2.3.2 only Calc?
 - 2.3.3 only Excel?
 - 2.3.4 both Excel and Calc?

GR 11 REVISION: PROBABILITY

Question 3

A five-sided die is thrown. What is the probability that:

- 3.1 the number will be less than 4?
- 3.2 the number will be greater than 4?
- 3.3 the number will be greater than or equal to four?
- 3.4 the number will be divisible by 3?
- 3.5 the number will not be divisible by 3?
- 3.6 What can you say about the sets in 3.4 and 3.5 and the sets in 3.1 and 3.3?

Question 4

A sports club asked their members which sports they prefer. There are 250 members in the club, of which:

180 like rugby (R)	95 like soccer (S)
40 like basketball (B)	70 like rugby and soccer
16 like all three sports	5 like soccer and basketball
235 like rugby or soccer or basketball	

- 4.1 Draw a Venn diagram based on the given information.
- 4.2 How many members like none of the three sports?
- 4.3 How many members like basketball and soccer, but not rugby?
- 4.4 What is the probability that a member from the club drawn at random will like at least two of these sports?

Question 5

The probability that event A will occur is $\frac{2}{5}$, the probability that event B will occur is $\frac{5}{12}$ and the probability that event C will occur is $\frac{1}{3}$. What is the probability that:

- 5.1 A or C will occur?
- 5.2 Neither A nor B will occur?

GR 11 REVISION: PROBABILITY

Question 6

The probability of rain in Port Louis, the capital of Mauritius, is 95% in February. The probability of a festival in dry weather is 32% during February, and one-and-a-half times more likely when it is wet.

- 6.1 Draw a tree diagram to illustrate all possible events and their probabilities.
- 6.2 What is the probability that:
 - 6.2.1 there will be a festival?
 - 6.2.2 there will not be a festival in wet weather?

Question 7

A survey was conducted on 4 895 people to determine whether drinking more than five cups of coffee per day was dependent on gender. Their responses are given in the table below.

	More than 5 cups	Less than 5 cups	Total
Female	(a)	1 565	(b)
Male	1 485	(c)	2 658
Total	2 157	(d)	4 895

- 7.1 Complete the table.
- 7.2 What is the probability that:
 - 7.2.1 a female drinks more than five cups of coffee per day?
 - 7.2.2 a person will be female?
 - 7.2.3 a person will break a leg?
- 7.3 Determine whether drinking more than five cups of coffee per day is dependent on gender. Substantiate your answer with relevant calculations, rounded off to two decimal places.

GR 11 REVISION: PROBABILITY

Question 8

A car manufacturer offers two types of transmission in its entry-level model, automatic (AT) or manual (MT). Buyers can choose between petrol (P), diesel (D) or hybrid (H) engines, and the car comes in red (R), silver (S) or black (B).

- 8.1 Draw a tree diagram to show all the possible options.
- 8.2 What is the probability that a car drawn at random is:
 - 8.2.1 black?
 - 8.2.2 an automatic with a hybrid engine?
 - 8.2.3 a manual with a diesel engine and red?
 - 8.2.4 a petrol engine with silver paint?