

## NICKS & TRICKS

# GUIDE TO 3<sup>rd</sup> YEAR MATHS

### Probability

#### 1. Probability Terms

Here are some definitions you might be asked in a probability question:

**Sample Space:** The set of all the possible outcomes of an experiment

**Outcome:** One possible result of an experiment

**Event:** A subset of the sample space – a collection of one or more outcomes

#### 2. AND/OR

Sometimes you'll be asked to combine probabilities.

It will usually be phrased with either the keyword **AND** or the keyword **OR**

When **AND** shows up you need to **multiply**  
When **OR** shows up you need to **add**

**Sample Question:**

2 dice are rolled what is the probability of getting a 6 **AND** a 3  
In a deck of cards what are the chances of pulling a Jack **OR** a King

# Worked Example

## Question:

a) What is the probability of getting a 1 when a fair die is tossed?

b)

A fair die is tossed 500 times.

The results are partially recorded in the table below.

Number on die	1	2	3	4	5	6
Frequency	70	82		90	91	81
Relative Frequency						



a)  $\frac{1}{6}$



Probability of an event  $P(E) =$   
$$\frac{\text{number of desirable outcomes}}{\text{total number of possible outcomes}}$$

b)

Number on die	1	2	3	4	5	6
Frequency	70	82	86	90	91	81

How do we get this?

$$500 - 70 - 82 - 90 - 91 - 81 = 86$$

# Continuing from above – 10 mins – Time yourself!

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## Question c

Calculate the relative frequency of each outcome and write it into the table above.  
Give your answers correct to 2 decimal places.

## Question d

Give a possible reason for the difference in value between the relative frequency for 1 in the table and your answer to part (a).