

The questions on this sheet are designed to remind you of some of the probability background that we will use in this module. We will use this sheet in the Week 1 tutorial. You can have a go at the parts we didn't cover then in your own time.

1. This module will build on your first and second year probability modules (Introduction to Probability, Probability and Statistics I, Probability and Statistics II). Find your notes from these modules now in case you need to remind yourself of anything from them.
2. What are the similarities and differences between the two mathematical disciplines of Probability and Statistics?
3. Define conditional probability and write a short summary of some of the more important properties and results involving it. Your account should include the statement of the Theorem of Total Probability and a few sentences describing the sort of situations in which you would use it.
4. You have a standard fair 6-sided die and a fair coin. You roll the die giving a number N . You then toss the coin N times. What is the probability that all the tosses come up heads? What is the expectation of the number of heads seen?
5. Write a short description of the difference between an event and a random variable aimed at a confused first-year student.
6. Write a brief summary of each of the following distributions: Binomial, Geometric, Poisson, Exponential.

Robert Johnson
r.johnson@qmul.ac.uk