

- Q1** A festival for independent film makers is organised and includes a competition for best film. There are three categories with varying numbers in each category - thriller (12), romance (9) and comedy (8) and 6 of these are included in a preliminary shortlist for consideration for best film. Assuming all films are equally likely to be selected, how likely is it that 2 thrillers will be shortlisted?
- Q2** The final shortlist consist of 7 films and the film adjudication panel consists of 4 judges who each choose the film they consider best. How likely is it that at least two judges will choose the same film?
- Q3** A competition is organised for a number of VIPs consisting of the various festival organisers, film reviewers and sponsors who number 126 and who are asked to choose what they consider to the 3 best films from a list of 8. They win or share in a cash prize if their selection matches a similar selection made by the adjudication panel. How likely is it that there will be at least 3 winners?
- Q4** One of the festival highlights will be a premier screening of a film by a celebrated director. A number of tickets are available in advance to be purchased online by the general public and the demand for these tickets can be modelled with a Poisson distribution with an average between sales time of 4 days and 15 hours. How likely is it that the number of tickets sold in a 8 day period will be at least 2?
- Q5** The duration of the films (minutes) entered in the festival can be reasonably well modelled with a normal distribution with mean 136 and standard deviation 44 minutes. How likely is it that a randomly considered film will have a duration of between 114 and 193 minutes inclusive?