

## MAS334 COMBINATORICS 2017/2018

### Feedback on homework 4

- Marks out of 20. Example Sheet 4, Q2 7 marks, Q3 4 marks, Example Sheet 5, Q2 9 marks.
- Tournaments: to show scores are possible for a tournament, either give a suitable tournament or use Landau's Theorem.
- To use Landau's Theorem, you only need to check *either* condition 2 or condition 3, not both.
- To check any  $r$  scores add to at least  $\binom{r}{2}$ , it is enough to check that *the smallest  $r$  scores* do. You should write down evidence that you have checked this.
- It's not enough to check the sum of all the scores. The any  $r$  condition must also be checked *for any  $r$* , in the relevant range  $1 \leq r \leq n - 1$  where  $n$  is the number of players
- The Latin square extension question was well done.
- It's best to say, for example, "The rectangle can be extended *if and only if*  $x = 7$ ."