

Math205 Assignment 3a

November 18th, 2009

Answer all questions and give complete reasons and checks for your answers. The parts of the questions are weighted as shown and the questions can be answered in any order. Start a fresh side of paper for each question. Remember that plagiarism will be punished severely.

1. This library search exercise is worth 8 marks in total.
 - (a) Find the journal article by Aldred with the word “genus” in the title and identify the year, volume, issue and number of pages.
 - (b) Download that whole paper and identify the theorem in which reference 2 is used.
 - (c) Find the AMS review of the paper referenced in 2, translating any \LaTeX into normally written mathematics.

2. A library shelf contains the following books which are either red or blue in colour. Four of the books are on the subject of Graph Theory and three of these are copies of a red book, the other being blue. There are 5 copies of a blue book on Sets and of the last four books half are copies of a red book and the rest are of a blue one.
 - (a) If you take out 5 books on loan, how many possible subject combinations are there? [4]
 - (b) How many ways are there to pick a favourite and least favourite book from all of the books? [2]
 - (c) How many books must be chosen at random to ensure at least 3 of some colour? How many must be taken to ensure 4 blue books are picked? [2]
 - (d) Two people try to reserve one book from these colours and subjects at the same time without knowing how many the CBU library has. How many different choices are there that would be impossible to fulfil without using inter-library loans? [4]