

MATH 55 - WORKSHEET 6 (TUESDAY)

- 1 An integer is called squarefree if it is not divisible by the square of a positive integer greater than 1. Find the number of squarefree positive integers less than 100.
- 2 How many positive integers less than 10,000 are not the second or higher power of an integer?
- 3 In how many ways can eight distinct balls be distributed into three distinct urns if each urn must contain at least one ball?
- 4 How many ways can the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 be arranged so that no even digit is in its original position?

- 5 A machine that inserts letters into envelopes goes haywire and inserts letters randomly into envelopes. What is the probability that in a group of 100 letters
- a no letter is put into the correct envelope?
 - b exactly one letter is put into the correct envelope?
 - c exactly 98 letters are put into the correct envelopes?
 - d exactly 99 letters are put into the correct envelopes?
 - e all letters are put into the correct envelopes?