**Question 4 4 Marks**

1. The financial database of a company is secured by a password protection system. Each employee is given a randomly generated password containing three letters and two numbers. If repetitions of letters and numbers are not allowed, how many possible passwords are there?  **1 mark**
2. Tickets for international cricket matches between Australia and England are very popular. The ticket sales manager needs to have enough sales staff available when the ticket office opens to cope with the influx of cricket fans. Past experience shows that fans will arrive at a rate of 15 per minute. Find the probability that 20 or more fans will arrive in a given minute? **1 mark**
3. A couple who own and manage a convenience store have been feeling pressure since a new low-price supermarket opened just down the road. In the year since the supermarket’s opening, the couple have noticed a drop in their daily takings. The results of a random sample of daily takings for fifty days (all drawn from the past year) are listed below (expressed in whole dollars).

987 1050 918 910 1120

890 897 704 935 983

1009 1050 973 779 958

1023 1016 979 1070 918

1049 926 945 904 1060

852 1080 947 1061 1008

978 904 1042 1032 1034

1037 838 1052 1078 916

1018 1002 1012 929 779

753 966 902 859 1009

Test this data using the normal probability plot to see whether it can adequately be described by the normal distribution. **2 marks**