

Math 4721 Quiz 1 Set 2

Please answer in a loose sheet

Write your ID number at the top of your first page.

Total marks: 15

Time: 40 minutes

1

In a certain town, 50% of the families own a car, 70% own a house and 30% own both car and house. If a family is randomly chosen, then what is the probability that this family owns neither a car nor a house, or both a car and a house? 3

2

In a poker game, each player gets a hand of 5 cards that are given randomly from 52 cards. A full house is defined as three of a kind (there are three cards of the same kind) and two of a kind (there are two cards of the same kind). The last two cards cannot be of the same kind as the first three. Given that there are 13 kinds and 4 suits, find the probability of getting a hand with a full house. 4

3

Mary is running for the state lottery. The results of the lottery in the past years show that she has a 94% chance of losing the lottery and a 3% probability of winning a cash prize. Apart from cash, her **chances of winning the 1st, 2nd and 3rd prizes are x , $2x$, and $3x$ respectively**. What is the probability of:

- a. Winning the 2nd prize or losing the lottery. 2
- b. Winning at least one cash prize if she runs for the lottery 4 times. 3
- c. Getting the 3rd prize, given that she did not win cash. 3