



# Probability Laws

## Basic Practice

1. A chip is drawn at random from 10 blue chips, 15 white chips and 5 red chips. Find the probability that the chip drawn is
  - (a) blue,
  - (b) white or red,
  - (c) not white,
  - (d) green.
2.
  - (a) List the sample space when a fair die is rolled.
  - (b) Find the probability that
    - (i) an even number is shown,
    - (ii) a prime number is shown,
    - (iii) an even or prime number is shown,
    - (iv) a prime number which is even is shown,
    - (v) a prime number which is not even is shown.
3. Twenty-five cards are numbered 11 to 35. A card is drawn at random. Find the probability that the number on the card is
  - (a) at most 20,
  - (b) at least 30,
  - (c) a multiple of 5,
  - (d) a factor of 100,
  - (e) a multiple of 5 but not a factor of 100.
4. Two keys that are engraved with the letters  $F$  and  $G$  belong to two of the four locks that are painted blue and red respectively. The other two locks are painted white and yellow. A key and a lock are randomly selected.
  - (a) Represent the sample space using a possibility diagram.
  - (b) Hence, find the probability that
    - (i) the selected key is engraved with the letter  $F$  and the selected lock is red,
    - (ii) the selected key can unlock the selected lock,
    - (iii) the selected key cannot unlock the selected lock.
5. Two fair dice, one red and one blue, are rolled.
  - (a) Represent the sample space using a possibility diagram.
  - (b) Hence, find the probability that the number shown on the red die is
    - (i) equal to the number shown on the blue die,
    - (ii) greater than the number shown on the blue die,
    - (iii) at most equal to the number shown on the blue die,
    - (iv) twice the number shown on the blue die.