

Probability

The probability of an event happening can be calculated.
Remember it will be a fraction between 0 and 1.

Probability of an event happening $P(\text{event}) = \frac{\text{number of successful outcomes}}{\text{number of possible outcomes}}$

Probability of an event NOT happening $P(\text{Not } E) = 1 - P(E)$

Probability of event A OR event B happening $P(A \text{ or } B) = P(A) + P(B)$

Probability of event A AND event B happening $P(A \text{ and } B) = P(A) \times P(B)$

1. There are 30 students in a class: 16 boys and 14 girls. What is the probability that a boy will be chosen at random?

2. A bag contains **3 green** marbles, **6 blue** marbles and **6 red** marbles. One marble is taken out of the bag at random. What is the probability of choosing;

(i) a red marble? (ii) a green marble? (iii) Not a red marble

3.

(a) What is the probability of choosing the letter B at random from the word ALPHABET?

(b) What is the probability of choosing the letter A at random from the word ALPHABET?

(c) What is the probability of NOT choosing the letter T at random from the word ALPHABET?

4. One card is chosen at random from a standard pack of cards. Find the probability that the chosen card will be;

(i) a heart (ii) an Ace (iii) a 7 (iv) a black King

(v) a picture card (vi) NOT an 2 (vii) NOT a diamond

5. A fair die is rolled. Calculate the probability the number rolled is

- (i) 6
- (ii) 7
- (iii) 1
- (iv) a prime number
- (v) a square number
- (vi) an odd number
- (vii) an even number
- (viii) a 1 or a 4
- (ix) a 1 then another 1
- (x) an odd number then a prime number
- (xi) a square number then not a 5
- (xii) a 6 then another 6

1) There are 2 red balls, 3 green balls and 5 blue balls in a bag.

- a) What is the probability of choosing a green ball at random?
- b) What is the probability of NOT choosing a green ball?
- c) What is the probability of choosing a red ball or a blue ball?
- d) What is the probability of choosing a blue ball, returning it to the bag and choosing a second blue ball?