

Mutually Exclusive Events

(a) There are some yellow, pink and green pens in a pencil case. When a pen is chosen at random, the probability of choosing a yellow pen is 0.25 and the probability of choosing a green pen is 0.45.

- (i) What is the probability of choosing a pink pen?
- (ii) What is the probability of not choosing a yellow pen?
- (iii) What is the probability of choosing a pink or yellow pen?
- (iv) What is the minimum number of pens that the pencil case can contain?

(b) In a football match, the probability that Rovers win a game is 0.4. The probability that they lose the game is the same as the probability of them winning the game.

- (i) What is the probability that Rovers draw the game?
- (ii) What is the probability that they do not lose the game?
- (iii) If Rovers played 10 games, how many of them would you expect to win?

(c) A drawer contains black, red and white socks. When a sock is chosen at random, the probability that it is white is $\frac{1}{2}$. The probability of choosing a black sock is twice the probability of choosing a red sock.

- (i) Work out the probability of not choosing a white sock.
- (ii) What is the probability of choosing a black sock?
- (iii) What is the probability of choosing red or white sock?
- (iv) If there are 12 black socks, how many socks are in the drawer in total?

Three friends, Joy, Kalia and Lilly, play a game of Uno. The probabilities that Joy, Kalia or Lilly wins the game are in the ratio 6 : 11 : 3.

- (i) Calculate the probability that Joy or Lilly wins the game.
- (ii) Work out the probability that Lilly does not win the game.
- (iii) Twenty games of Uno are played. How many games would you expect Kalia to win?

Mutually Exclusive Events

(a) There are some yellow, pink and green pens in a pencil case. When a pen is chosen at random, the probability of choosing a yellow pen is 0.25 and the probability of choosing a green pen is 0.45.

- (i) What is the probability of choosing a pink pen?
- (ii) What is the probability of not choosing a yellow pen?
- (iii) What is the probability of choosing a pink or yellow pen?
- (iv) What is the minimum number of pens that the pencil case can contain?

(b) In a football match, the probability that Rovers win a game is 0.4. The probability that they lose the game is the same as the probability of them winning the game.

- (i) What is the probability that Rovers draw the game?
- (ii) What is the probability that they do not lose the game?
- (iii) If Rovers played 10 games, how many of them would you expect to win?

(c) A drawer contains black, red and white socks. When a sock is chosen at random, the probability that it is white is $\frac{1}{2}$. The probability of choosing a black sock is twice the probability of choosing a red sock.

- (i) Work out the probability of not choosing a white sock.
- (ii) What is the probability of choosing a black sock?
- (iii) What is the probability of choosing red or white sock?
- (iv) If there are 12 black socks, how many socks are in the drawer in total?

Three friends, Joy, Kalia and Lilly, play a game of Uno. The probabilities that Joy, Kalia or Lilly wins the game are in the ratio 6 : 11 : 3.

- (i) Calculate the probability that Joy or Lilly wins the game.
- (ii) Work out the probability that Lilly does not win the game.
- (iii) Twenty games of Uno are played. How many games would you expect Kalia to win?