Tutorial

(Level 1)

1. A card is drawn at random from a pack of cards. Find the probability that it is either a "club" or a "heart".
2. Twenty cards are marked from 1 to 20. One is drawn at random. Find the probability that the card is a multiple of 5 or 3
3. A box contains 2 white marbles and 3 black marbles. A marble is drawn at random and put back into the box. Then another marble is drawn at random from the box. Find the probability that both of the marbles drawn are of the same color.
4. Mr. Chan has 2 sons and 3 daughters. Mr. Li has 3 sons and 2 daughters. A child is chosen at random from each family. Find the probability of choosing a boy and a girl.

(Level 2)

5. Three balls are drawn at random from a box containing 10 black balls, 8 white balls and 2 red balls. Find the probability that
   a) all the balls drawn are black.
   b) all the balls drawn are not white.
   c) the 1st ball drawn is black, the second is white and the third is red.
   d) all the balls drawn are of the same colour.
6. Box A contains 3 red balls and 1 white ball. Box B contains 2 red balls and 1 black ball. A ball is taken out at random from A and put into B. Then a ball is drawn at random from B and put into box C. Find the probability that
   a) A contains 3 red balls.
   b) B contains 3 red balls.
   c) C contains the white ball.

(Level 3)

7. The probability that Peter hits a target in a shot is $\frac{1}{4}$ and The probability that John hits a target in a shot is $\frac{1}{3}$. If each person shoots twice. Find the probability that the target will be hit
   a) at least once.
   b) exactly once.
   c) exactly twice.

Solutions

1. 0.5
2. 0.45
3. 0.52
4. 0.52
5. a) $\frac{2}{19}$ b) $\frac{11}{57}$ c) $\frac{4}{171}$ d) $\frac{44}{285}$
6. a) 0.25 b) $\frac{3}{16}$ c) $\frac{1}{16}$
7. a) $\frac{3}{4}$ b) $\frac{5}{12}$ c) $\frac{37}{144}$