# Probability



## Sum and product (1)

QUESTION **1** Complete:

**a** If 2 events A and B are mutually exclusive then if A occurs, B will _____.

**b** If 2 events A and B are mutually exclusive then the probability of A or B = _____

**c** If 2 events A and B are not mutually exclusive then the probability of A or B = _____

QUESTION **2** The two given outcomes are mutually exclusive. True or false?

**a** getting an odd number or a number less than 5 when tossing a die _____

**b** choosing a multiple of 5 or a multiple of 7 when choosing an integer between 1 and 30 _____

**c** getting a club or a king when choosing a card from a standard pack of cards _____

QUESTION **3** A card is selected at random from a standard pack of cards. What is the probability that it is:

**a** red

**b** a queen

**c** a red queen

**d** red or a queen

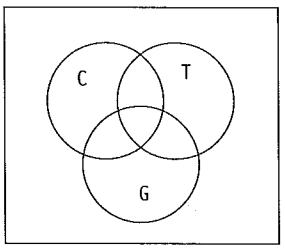
QUESTION **4** An integer, $n$, is chosen at random. If $1 \leq n \leq 100$, what is the probability that $n$ is:

**a** both even and less than 20

**b** even or less than 20

QUESTION **5** A group of 30 people were surveyed as to what sports they watched on television during the previous week. 19 watched cricket, 12 watched tennis and 9 watched golf. Of these, 3 watched all three sports. Of the 19 who watched cricket, 7 also watched tennis and 5 golf. 4 people watched both tennis and golf.

**a** Fill in the Venn diagram.




**b** What is the probability that a person chosen at random from the group did not watch any sport on television?

# Probability

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## Sum and product (2)

QUESTION **1** A card is picked at random from a standard pack of playing cards. What is the probability that the card is:

**a** a two or a three

**b** a heart or a queen

**c** black or an ace

QUESTION **2** The numbers 1 to 10, inclusive, are written on separate cards. One card is selected at random. What is the probability that the card is:

**a** less than 7

**b** even

**c** even or less than 7

QUESTION **3** In a class of 40 students, 25 study music and 19 study art. If 8 students study both music and art:

**a** how many students study

**i** music but not art

**ii** art but not music

**b** What is the probability that a student selected at random studies music or art?

QUESTION **4** A 3 digit number is formed using the digits 1, 2, or 3 without replacement. What is the probability that the number is:

**a** even

**b** less than 200

**c** both even and less than 200

**d** even or less than 200

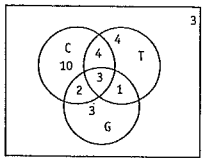
QUESTION **5** 100 tickets are sold in a raffle, 30 are blue, 30 are green and 40 are white. What is the probability that the winning ticket is:

**a** blue

**b** white

**c** blue or white

**Page 180** 1 a not occur b $P(A) + P(B)$ c $P(A) + P(B) - P(AB)$ 2 a false b true c false

3 a $\frac{1}{2}$ b $\frac{1}{13}$ c $\frac{1}{26}$ d $\frac{7}{13}$ 4 a $\frac{9}{100}$ b $\frac{3}{5}$ 5 a (see right) 5a 

b $\frac{1}{10}$

**Page 181** 1 a $\frac{2}{13}$ b $\frac{4}{13}$ c $\frac{7}{13}$ 2 a $\frac{3}{5}$ b $\frac{1}{2}$ c $\frac{4}{5}$ 3 a i 17 ii 11

b $\frac{9}{10}$ 4 a $\frac{1}{3}$ b $\frac{1}{3}$ c $\frac{1}{6}$ d $\frac{1}{2}$ 5 a $\frac{3}{10}$ b $\frac{2}{5}$ c $\frac{7}{10}$