

# LO: understanding Probability - Worksheet 1

- 1 State whether each of these is impossible, very unlikely, unlikely, even chance, likely, very likely or certain.
- |   |                                      |
|---|--------------------------------------|
| a Taking a heart from an ordinary pack of cards               | b Christmas Day being on 25 December |
| c Someone in your class being left-handed                     | d You living to be 100               |
| e Obtaining a score of 7 when throwing a fair, six-sided dice | f You watching some TV this evening  |
| g A newborn baby being a girl                                 |                                      |

- 2 Work out the probability of each outcome. Remember to write the probability fractions in their lowest terms.

**Hints and tips** If an outcome is impossible, you write the probability as 0. If it is certain, you write the probability as 1.

- |  |   |
|--|---|
| a Throwing a 2 with a fair, six-sided dice         | b Throwing a 6 with a fair, six-sided dice            |
| c Throwing a fair coin and getting a tail          | d Taking a queen from an ordinary pack of cards       |
| e Taking a heart from an ordinary pack of cards    | f Taking a black card from an ordinary pack of cards  |
| g Throwing a 6 or less with a fair, six-sided dice | h Taking a black queen from an ordinary pack of cards |
| i Taking an ace from an ordinary pack of cards     | j Throwing a 7 with a fair, six-sided dice            |

- 3 A bag contains only blue balls. If one ball is taken out at random, what is the probability that it is:

a black                      b blue?

- 4 Ten cards numbered from 1 to 10 (inclusive) are placed in a hat. Bob takes a card out of the bag without looking. What is the probability that he takes out:

a the number 7                      b an even number                      c a number greater than 6  
d a number less than 3                      e a number from 3 to 8 (inclusive)?

- 5 A bag contains three blue beads, two pink beads and one black bead. Craig takes a bead from the bag without looking. What is the probability that he takes out:

a a blue bead                      b a pink bead                      c the black bead?

- 6 In a Christmas raffle, 2500 tickets are sold. Mr Weller has 50 tickets. What is the probability that he wins the first prize?

- 7 A card is taken at random from an ordinary pack of cards. What is:

a P(jack)                      b P(10)                      c P(red card)                      d P(red jack)

- 8 A bag contains 25 coloured balls. 12 are red, 7 are blue and the rest are green. Mahmood takes a ball at random from the bag.

a Write down:

i P(he takes a red)                      ii P(he takes a blue)                      iii P(he takes a green).

b Add together the three probabilities. What do you notice?

c Give a reason for your answer to part b.

- 9 Adam, Bianca, Charles, Debbie and Elizabeth are in the same class. Their teacher asks two of these students, at random, to do a special job.

a Write down all the possible ways of choosing two students.

**Hints and tips** There are 10 ways altogether.

- b How many pairs give two boys?  
c What is the probability of choosing two boys?  
d How many pairs give a boy and a girl?  
e What is the probability of choosing a boy and a girl?  
f What is the probability of choosing two girls?

- 10 A teacher chooses, at random, a student in her class to take a message. Tom says: 'The probability that the teacher chooses a boy is 50%.' Explain why Tom may not be correct.

- 11 This table shows the numbers of boys and girls in 12 classes at Bradway School.

Year	Y1		Y2		Y3		Y4		Y5		Y6	
Class	P	Q	R	S	T	U	W	X	Y	Z	K	L
Girls	7	8	8	10	10	10	9	11	8	12	14	15
Boys	9	10	9	10	12	13	11	12	10	8	16	17

One student is chosen at random from each class.

Which class has the highest probability of having a boy chosen?