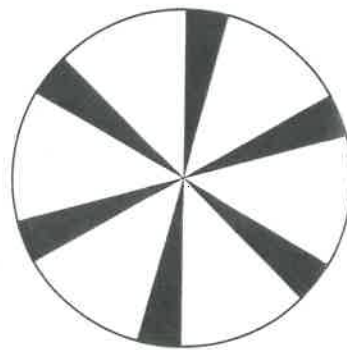


LO: Understanding Probability - Worksheet 2.

- 1 Iqbal throws an ordinary dice. What is the probability that he throws:
a a 2 **b** a 5 **c** a 2 or a 5?
- 2 A card is taken at random from an ordinary pack of cards. What is the probability that the card is:
a a heart **b** a club **c** a heart or a club?
- 3 A letter is taken at random from this set of letter cards.
- | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| P | R | O | B | A | B | I | L | I | T | Y |
|---|---|---|---|---|---|---|---|---|---|---|
- What is the probability of each outcome?
a P(B) **b** P(a vowel) **c** P(B or a vowel)
- 4 A bag contains 10 white balls, 12 black balls and 8 red balls. A ball is drawn at random from the bag. What is the probability that it will be:
a white **b** black **c** black or white
d not red **e** neither red nor black?
- 5 John needs his calculator for his mathematics lesson. It is always in his pocket, his school bag or his locker. The probability that it is in his pocket is 0.35 and the probability that it is in his school bag is 0.45. What is the probability that:
a he will have the calculator for the lesson (pocket or school bag)
b his calculator is in his locker?
- 6 Aneesa downloads 20 music tracks of which 12 are rock, 5 are pop and 3 are classical. She picks a track at random. What is the probability that it will be:
a rock or pop **b** pop or classical **c** not pop?
- 7 The probability that it will rain on Monday is 0.5, the probability that it will rain on Tuesday is 0.5 and the probability that it will rain on Wednesday is 0.5. Kelly argues that it is certain to rain on Monday, Tuesday or Wednesday because $0.5 + 0.5 + 0.5 = 1.5$, which is bigger than 1 so it is a certain event. Explain why she is wrong.

- 8 In a TV game show, contestants throw a dart at a dartboard resembling the one shown. The angle at the centre of each black sector is 15° . If the dart lands in a black sector, the contestant loses. What is the probability that a contestant who throws the dart at random, and hits the board, wins?



9

The probability of it snowing on any one day in February is $\frac{1}{4}$.

One year, there was no snow for the first 14 days.

Ciara said: 'The chance of it snowing on any day in the rest of February must now be $\frac{1}{2}$ '.

Explain why Ciara is wrong.

10

During morning break, Saskia has a choice of coffee, tea or hot chocolate. She also has a choice of a ginger biscuit, a rich tea biscuit or a doughnut.

The table shows the probabilities that she chooses each drink and snack.

Drink	Coffee (C)	Tea (T)	Hot chocolate (H)
Probability	0.2	0.5	0.3

Snack	Ginger biscuit (G)	Rich tea biscuit (R)	Doughnut (D)
Probability	0.3	0.1	0.6

- a** Leon says that the probability that Saskia has coffee and a ginger biscuit is 0.5. Explain why Leon is wrong.
- b** There are nine possible combinations of drink and snack. Two of these are coffee and a ginger biscuit (C, G) and coffee and rich tea biscuit (C, R). Write down the other seven combinations.
- c** The probability that Saskia chooses coffee and a ginger biscuit is calculated by working out $0.2 \times 0.3 = 0.06$, and the probability that she chooses coffee and a rich tea biscuit is calculated by $0.2 \times 0.1 = 0.02$.
- i** Work out the other seven probabilities.
- ii** Add up all nine probabilities. What do you notice about your answer?