

1 Single events

A bag holds red, blue and green counters. There are 3 times as many blue as green, and 12 more blue than green. $P(\text{red}) = 0.25$

- How many red counters are there?
- Some red counters are added, and now $P(\text{red}) = 0.4$. How many?

2 Relative frequency

A spinner numbered 1 to 4 is spun 200 times. The relative frequencies of 1 to 4 are 0.2, 0.32, x and $2x$.

- Find x .
- How many 4s were there? Is the spinner fair? Why?

3 Expected outcomes

In n games, a player expects 24 wins. In $n + 50$ games, the player expects 39 wins.

- Find $P(\text{win})$ and n .
- A game costs 50p and a win pays £2. Is the game worth playing? Show why.

4 Sample space diagrams

A fair dice and a fair spinner (1, 2, 3) are used. The scores are multiplied.

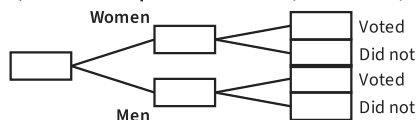
- Find $P(\text{a square number})$.
- The product is even. Find $P(\text{more than 6})$.

Dice	x	1	2	3	4	5	6
Spin	1						
	2						
	3						

5 Frequency trees

Three fifths of a club are women. A quarter of the women and a third of the men voted: 51 in all.

- Complete the frequency tree.
- A voter is picked. Find $P(\text{a woman})$.



Probability

revision mat

6 Two way tables

120 students. Three eighths are in Year 11. 40% of Year 10 have a hot lunch. $P(\text{hot lunch}) = 0.5$

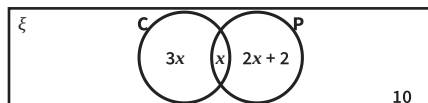
- Complete the table.
- Find $P(\text{Year 11})$ for a packed lunch.

	Hot	Packed	Total
Year 10			
Year 11			
Total			120

7 Venn diagrams

60 students. C: cello. P: piano.

- Find x .
- A pianist is picked. Find $P(C)$.



8 The AND and OR rules

A and B are independent. $P(A) = 0.4$ and $P(A \text{ or } B \text{ or both}) = 0.7$

- Find $P(B)$.
- Find $P(\text{exactly one of } A \text{ and } B)$.

9 Tree diagrams

n counters, 3 of them red. Two are taken without replacement. $P(\text{both red}) = \frac{1}{15}$

- Show that $n^2 - n - 90 = 0$, and find n .
- Find $P(\text{at least one is red})$.

10 Conditional probability

A scanner checks bags for a banned item.

- Find $P(\text{alarm})$.
- The scanner alarms. Find $P(\text{banned})$, to 3 significant figures.

