

Probabilities Summing to 1

For AQA GCSE Mathematics (8300) • Foundation tier

Name _____

Total marks: **29**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

- 1** The probability that it rains tomorrow is 0.35
Write down the probability that it does **not** rain tomorrow.

[1 mark]

Answer _____

- 2** The probability that a biased dice lands on 6 is $\frac{2}{9}$
Circle the probability that it does **not** land on 6

[1 mark]

$\frac{2}{9}$

$\frac{7}{9}$

$\frac{9}{2}$

$\frac{1}{9}$

- 3 A spinner can land on red, blue, green or yellow.
The table shows some of the probabilities.

Colour	Red	Blue	Green	Yellow
Probability	0.3	0.15	0.4	

- (a) Work out the probability that the spinner lands on yellow.

[2 marks]

Answer _____

- (b) Work out the probability that the spinner lands on red **or** green.

[1 mark]

Answer _____

- 4 A spinner has ten sections, each labelled A , B , C or D .
Here are the probabilities that it lands on each letter.

Letter	A	B	C	D
Probability	0.1	0.5	0.2	0.3

Give **one** reason why there must be a mistake in the table.

[1 mark]

- 5 There are 60 counters in a bag.
The probability that a counter taken at random is red is 0.4
How many of the counters are **not** red?

[2 marks]

Answer _____

- 6 Four teams, A , B , C and D , play in a competition.
The probability that A wins is 0.3
The probability that B wins is 0.25
 C and D are equally likely to win.
Work out the probability that D wins.

[2 marks]

Answer _____

- 7** A vending machine sells only water, cola, lemonade and juice.
The table shows the probability that the next drink it sells is each type.

Drink	Water	Cola	Lemonade	Juice
Probability	0.35	0.25		

- (a) The probability that the drink is lemonade is 0.1 more than the probability that it is juice.
Complete the table.

[2 marks]

- (b) One day the machine sells 40 lemonades.
Work out an estimate for the number of waters it sells that day.

[3 marks]

Answer _____

- 8** A bag contains red, blue, green and yellow beads.
A bead is picked at random.
The probability of picking green is twice the probability of picking blue.

Colour	Red	Blue	Green	Yellow
Probability	0.2	x	$2x$	0.35

Work out the probability of picking green.

[3 marks]

Answer _____

- 9 Sam puts 20 counters in an empty bag.
Each counter is red, blue, green or yellow, and there is at least one of each colour.
A counter will be taken from the bag at random.

Complete the table to show how many counters of each colour Sam could use so that
the probability of red is 0.3
the probability of blue is twice the probability of green
there are more yellow counters than green counters.

Colour	Red	Blue	Green	Yellow
Number of counters				

[3 marks]

- 10 There are 1200 students at a college.
A student is chosen at random.

- (a) The probability that the student is taking a GCSE resit is 0.09
How many of the students are taking a GCSE resit?

[2 marks]

Answer _____

- (b) The probability that the student is studying
A-levels is 0.72
Core Maths is 0.35
Show that some students are studying A-levels **and** Core Maths.

[2 marks]

- 11** A florist has a bucket of roses, tulips and lilies.
The table shows the number of each type of flower.

Flower	Rose	Tulip	Lily
Number	$2x$	$x + 6$	x

There are 54 flowers in the bucket.

A flower is taken at random.

Work out the probability that it is **not** a lily.

[4 marks]

Answer _____