

Probabilities Summing to 1

For Pearson Edexcel GCSE Mathematics (1MA1) • Foundation tier

Name _____

Total marks: **30**

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

- 1** The probability that Amir is late for school is 0.08
Work out the probability that Amir is **not** late for school.

.....
(1)

(Total for Question 1 is 1 mark)

- 2** A shop sells phone cases that are either plastic or leather.
The probability that a phone case chosen at random is leather is $\frac{4}{11}$
Work out the probability that the phone case is plastic.

.....
(1)

(Total for Question 2 is 1 mark)

- 3** Here is a 4-sided spinner.
The table shows the probabilities that the spinner lands on 1, 2 and 3

Number	1	2	3	4
Probability	0.12	0.25	0.31	x

- (a) Work out the value of x .

$$x = \dots\dots\dots$$

(2)

- (b) Mia spins the spinner 200 times.
Work out an estimate for the number of times the spinner lands on 3

$$\dots\dots\dots$$

(2)

(Total for Question 3 is 4 marks)

- 4** A bag contains red, blue, yellow and white counters.
A counter is taken at random.
The probability that it is yellow is the same as the probability that it is blue.

Colour	Red	Blue	Yellow	White
Probability		0.15		0.1

Work out the probability that the counter is red.

.....
(3)

(Total for Question 4 is 3 marks)

- 5** There are only red, green and blue pens in a box.
The probability that a pen taken at random is red is $\frac{1}{4}$
The probability that it is green is $\frac{1}{3}$
There are 60 pens in the box.
Work out the number of blue pens.

.....
(3)

(Total for Question 5 is 3 marks)

- 6** A box of crisps contains only ready salted, cheese, vinegar and prawn flavour packets. A packet is taken at random from the box. The table shows the probability that the packet is ready salted.

Flavour	ready salted	cheese	vinegar	prawn
Probability	0.28			

The numbers of cheese, vinegar and prawn packets are in the ratio 3 : 2 : 1
Complete the table.

(4)

(Total for Question 6 is 4 marks)

- 7** A café sells only four types of sandwich: chicken, tuna, egg and cheese. The table shows the probability that the next sandwich it sells is chicken and the probability that it is tuna.

Sandwich	chicken	tuna	egg	cheese
Probability	0.32	0.2		

- (a) The probability that the next sandwich sold is egg is 3 times the probability that it is cheese.
Complete the table.

(2)

- (b) On Monday the café sells 45 cheese sandwiches.
Work out an estimate for the number of chicken sandwiches it sells on Monday.

.....

(2)

(Total for Question 7 is 4 marks)

- 8** There are 72 chocolates in a box.
 Each chocolate is milk, dark or white.
 There are twice as many milk chocolates as dark chocolates.
 A chocolate is taken at random from the box.
 The probability that it is white is $\frac{1}{6}$

Work out the number of dark chocolates in the box.

.....
 (3)

(Total for Question 8 is 3 marks)

- 9** There are only red buttons, white buttons and blue buttons in a jar.
 A button is taken at random from the jar.
 The table shows the probabilities of getting a red button or a white button.

Colour	red	white	blue
Probability	0.35	0.4	

- (a) Work out the probability that the button is blue.

.....
 (1)

- (b) There are more than 50 buttons and fewer than 70 buttons in the jar.
 Work out the number of buttons in the jar.
 You must give a reason for your answer.

.....
 (2)

(Total for Question 9 is 3 marks)

- 10** There are only green balloons, orange balloons and purple balloons in a bag.
The number of green balloons : the number of orange balloons = 3 : 5
There are 36 green balloons in the bag.
Rosa is going to take at random a balloon from the bag.
The probability that the balloon will be purple is 0.2
Work out the total number of balloons in the bag.

.....

(4)

(Total for Question 10 is 4 marks)
