

Basic Probability and the Probability Scale

For AQA GCSE Mathematics (8300) • Foundation tier

Name _____

Total marks: **28**

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

1 A fair coin is thrown and a fair six-sided dice is rolled.

(a) Circle the word that best describes the probability that the coin lands on heads.

[1 mark]

impossible

unlikely

evens

likely

certain

(b) Circle the word that best describes the probability that the dice lands on 6

[1 mark]

impossible

unlikely

evens

likely

certain

(c) Circle the word that best describes the probability that the dice lands on a number less than 7

[1 mark]

impossible

unlikely

evens

likely

certain

2 Here are ten cards.

1	1	2	3	3	3	4	5	5	6
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One card is taken at random.

(a) Write down the probability that the number is 3

[1 mark]

Answer _____

(b) Write down the probability that the number is even.

[1 mark]

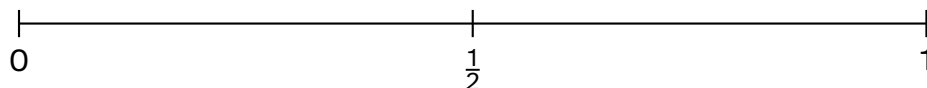
Answer _____

(c) Write down the probability that the number is 7

[1 mark]

Answer _____

3 A fair six-sided dice is rolled.



(a) On the scale, mark with a cross (x) the probability that the dice lands on a number less than 3

[1 mark]

(b) On the scale, mark with a cross (x) the probability that the dice lands on a number less than 7

[1 mark]

- 4 A fair 8-sided dice is numbered 1 to 8
It is rolled once.
Circle the probability of getting a multiple of 3

[1 mark]

$\frac{1}{8}$

$\frac{2}{8}$

$\frac{3}{8}$

$\frac{2}{6}$

- 5 A bag contains 4 red counters, 7 blue counters and 9 green counters.
A counter is taken at random.

- (a) Write down the probability that the counter is red.

[1 mark]

Answer _____

- (b) Write down the probability that the counter is **not** blue.

[1 mark]

Answer _____

- (c) Some more red counters are put in the bag.
The probability of taking a red counter is now $\frac{1}{2}$
How many red counters were added?

[2 marks]

Answer _____

- 6** A letter is chosen at random from the word MATHEMATICS
What is the probability that the letter is a vowel?

[2 marks]

Answer _____

- 7** A fair spinner has eight equal sections numbered 1, 2, 3, 4, 5, 6, 7 and 8

Sam says,

“The spinner is more likely to land on an even number than on a prime number.”

Is Sam correct?

Tick a box.

You must show your working.

[2 marks]

☐ Yes

☐ No

- 8** A fair spinner has six equal sections.
Three sections are red, two sections are blue and one section is yellow.

(a) Write down the probability that the spinner lands on blue.

[1 mark]

Answer _____

- (b) Kofi spins the spinner four times.
It lands on red every time.
Kofi says,

“Red has come up four times, so red is less likely on my next spin.”

Is Kofi correct?

Give a reason for your answer.

[1 mark]

- 9** There are 240 students in Year 10 at a school.
One of these students is chosen at random to meet a visiting author.

(a) Write down the probability that the student chosen is in Year 10

[1 mark]

Answer _____

- (b) 58 of the students walk to school and 110 come by bus.
The rest come by car.
Work out the probability that the student chosen comes to school by car.

[2 marks]

Answer _____

- 10** At a school fair, raffle tickets are numbered from 1 to 40
One ticket is picked at random to win a prize.

(a) Write down the probability that the number on the ticket is a multiple of 5
[1 mark]

Answer _____

(b) Write down the probability that the number on the ticket has two digits.
[1 mark]

Answer _____

- 11** A tin contains 36 biscuits.
Each biscuit is plain, chocolate or ginger.
A biscuit is taken at random from the tin.

$$P(\text{plain}) = \frac{1}{3} \quad P(\text{chocolate}) = \frac{5}{12}$$

(a) Work out the number of ginger biscuits in the tin.
[2 marks]

Answer _____

(b) Ravi eats 2 plain biscuits and 4 ginger biscuits from the tin.
A biscuit is then taken at random from the tin.
Work out the probability that it is a chocolate biscuit.
[2 marks]

Answer _____