Past Papers Worksheet P2 Probability of Single Events IGCSE Mathematics 0580



1. Paul and Sammy take part in a race. The probability that Paul wins the race is 9/35 .
   The probability that Sammy wins the race is 26%. Who is more likely to win the race?
   Give a reason for your answer. [2]
   0580/21/M/J/15

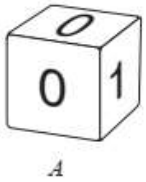
2. Yeung and Ariven compete in a triathlon race. The probability that Yeung finishes this race is 3/5 . The probability that Ariven finishes this race is 2/3 .
   Which of them is more likely to finish this race?
   Give a reason for your answer. [1]
   0580/43/O/N/14 Q4

3. A letter is chosen at random from the list.
   Find the probability that the letter chosen is A. [1]

   A L G E B R A

   0580/27/M/J/14 Q2) (a)

4. The diagram shows a fair dice.
   The numbers on dice are 0, 0, 1, 1, 1, 3. When the dice is rolled, the score is the number on the top face.
   The dice is rolled once.
   Find the probability that the score is not 3. [1]

   A

   0580/42/O/N/17 Q7)(a)

Fundoo Tutor offers personalized coaching for IGCSE, IB, and SAT students. Need a tutor? http://fundootutor.com/book-a-call/



5. Samira and Sonia each have a bag containing 20 sweets.
   In each bag, there are 5 red, 6 green and 9 yellow sweets.
   Samira chooses one sweet at random from her bag.
   Write down the probability that she chooses a yellow sweet. [1]
   0580/22/F/M/18 Q22 (a)

6. A box contains 3 blue pens, 4 red pens and 8 green pens only.
   A pen is chosen at random from the box.
   Find the probability that this pen is green. [1]
   0580/21/M/J/18 Q20 (a)

7. The Ocean View Hotel has 300 rooms numbered from 100 to 399.
   A room is chosen at random. Find the probability that the room number ends in zero [2]
   0580/23/M/J/13 Q2)

8. The table shows information about the time, t minutes, taken for each of 150 girls to complete an essay.

Time (t minutes)	$60 < t \leqslant 65$	$65 < t \leqslant 70$	$70 < t \leqslant 80$	$80 < t \leqslant 100$	$100 < t \leqslant 150$
Frequency	10	26	34	58	22

   A girl is chosen at random.
   Work out the probability that she took more than 100 minutes to complete the essay. [1]
   0580/43/O/N/17 Q4) (d)

Fundoo Tutor offers personalized coaching for IGCSE, IB, and SAT students. Need a tutor? http://fundootutor.com/book-a-call/



9. A group of 200 people were asked which city they would like to visit next.
The table shows the results.

City	London	Paris	New York	Tokyo
Number of people	50	48	56	46

A person from the group is chosen at random.
Write down the probability that this person would like to visit either Paris or Tokyo next. [2]
0580/21/O/N/18 Q22)

10. In a survey of 60 cars, the type of fuel that they use is recorded in the table below.
Each car only uses one type of fuel.

Petrol	Diesel	Liquid Hydrogen	Electricity
40	12	2	6

Calculate the probability that a car chosen at random uses Electricity.
Write your answer as a fraction in its simplest form [2]
0580/22/O/N/11 Q16 (c)

11. The diagram shows 5 cards.



Donald chooses a card at random.
(i) Write down the probability that the number of dots on this card is an even number. [1]
(ii) Write down the probability that the number of dots on this card is a prime number. [1]
0580/41/O/N/19 Q8(a)

Fundoo Tutor offers personalized coaching for IGCSE, IB, and SAT students. Need a tutor? http://fundootutor.com/book-a-call/



12. One of these 7 cards is chosen at random.



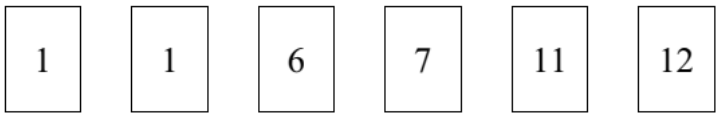
Write down the probability that the card
(i) shows the letter A, [1]
(ii) shows the letter A or B, [1]
(iii) does not show the letter B. [1]
0580/43/M/J/15 Q5(a)

13. In this question, give all your answers as fractions.
The letters of the word NATION are printed on 6 cards.



(a) A card is chosen at random.
Write down the probability that
(i) it has the letter T printed on it, [1]
(ii) it does not have the letter N printed on it, [1]
(iii) the letter printed on it has no lines of symmetry. 1]
0580/43/M/J/14 Q6)

14. Six cards are numbered 1, 1, 6, 7, 11 and 12.



In this question, give all probabilities as fractions.
One of the six cards is chosen at random.
(i) Which number has a probability of being chosen of 1/3?[1]
(ii) What is the probability of choosing a card with a number which is
smaller than at least three of the other numbers? [1]
0580/04/O/N/09 Q3) (a)

Fundoo Tutor offers personalized coaching for IGCSE, IB, and SAT students. Need a tutor? http://fundootutor.com/book-a-call/



15. Dan either walks or cycles to school.
The probability that he cycles to school is 1/3 .
Write down the probability that Dan walks to school. [1]
0580/22/F/M/16 Q21)(a)

16. The probability that Stephanie wins her next tennis match is 0.85 .
Find the probability that Stephanie does not win her next tennis match. [1]
0580/22/M/J/17 Q2)

17. A biased 4-sided dice is rolled. The possible scores are 1, 2, 3 or 4.
The probability of rolling a 1, 3 or 4 is shown in the table

Score	1	2	3	4
Probability	0.15		0.3	0.35

Complete the table. [2]
0580/22/M/J/15 Q4)

18. A spinner can land on the colours green, black or red.The table shows the probabilities of the spinner landing on green or black.

Colour	Green	Black	Red
Probability	$\frac{2}{5}$	$\frac{1}{4}$	

Complete the table. [2]
0580/23/O/N/22 Q6) (a)

Fundoo Tutor offers personalized coaching for IGCSE, IB, and SAT students. Need a tutor? http://fundootutor.com/book-a-call/



19. Ravi spins a biased 5-sided spinner, numbered 1 to 5.
The probability of each number is shown in the table.

Number	1	2	3	4	5
Probability	$\frac{1}{6}$	$\frac{1}{4}$	$\frac{1}{3}$	x	x

(a) Find the value of x. [3]

0580/42/F/M/17 Q4) (a)

20. Hattie has a box of coloured pens.
She takes a pen at random from the box.
The probability that she takes a red pen is 0.4 .
(a) Work out the probability that she does not take a red pen. [1]
(b) The box contains only blue, red and green pens.
There are 15 blue pens and 15 green pens.
Complete the table. [2]

Colour of pen	Blue	Red	Green
Number of pens	15		15
Probability		0.4	

0580/23/M/J/16 Q11)

Fundoo Tutor offers personalized coaching for IGCSE, IB, and SAT students. Need a tutor? http://fundootutor.com/book-a-call/



21. For a small international school, the holiday destinations of the 255 students are shown in the table.

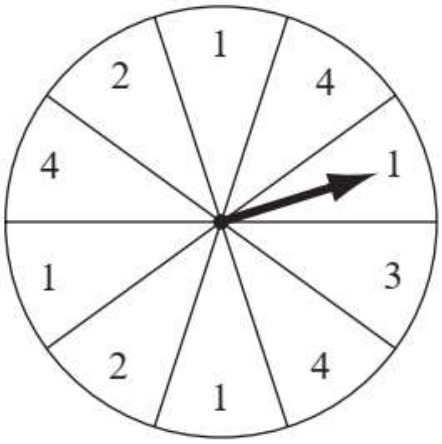
(a) Complete the table. [3]

	Boys	Girls	Total
Asia	62	28	
Europe	35	45	
Africa		17	
Total			255

(b) What is the probability that a student chosen at random is a girl going on holiday to Europe? [1]

0580/22/O/N/10 Q17)

22. The diagram shows a circular board, divided into 10 numbered sectors.



When the arrow is spun it is equally likely to stop in any sector.

(a) Complete the table below which shows the probability of the arrow stopping [1]

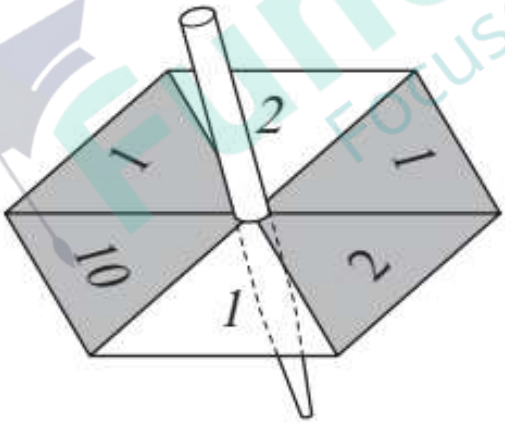
Fundoo Tutor offers personalized coaching for IGCSE, IB, and SAT students. Need a tutor? http://fundootutor.com/book-a-call/



Number	1	2	3	4
Probability		0.2		0.3

(b) The arrow is spun once.
Find
(i) the most likely number, [1]
(ii) the probability of a number less than 4. [1]
0580/43/M/J/10 Q3)

23. The diagram shows a spinner with six numbered sections.



Some of the sections are shaded.
Each time the spinner is spun it stops on one of the six sections.
It is equally likely that it stops on any one of the sections.
(a) The spinner is spun once.
Find the probability that it stops on
(i) a shaded section, [1]
(ii) a section numbered 1, [1]
(iii) a shaded section numbered 1, [1]
(iv) a shaded section or a section numbered 1. [1]
0580/42/M/J/10 Q3)

Fundoo Tutor offers personalized coaching for IGCSE, IB, and SAT students. Need a tutor? http://fundootutor.com/book-a-call/



24. Katy has 5 white flowers, x red flowers and $(2x + 1)$ yellow flowers.
She picks a flower at random.
The probability that it is white is $\frac{1}{12}$
Find the probability that it is yellow. [4]
0580/22/O/N/21 Q7)

25. Sachin picks a number at random from the first three multiples of 3.
He then picks a number at random from the first three prime numbers.
He adds the two numbers to find a score.
(a) Complete the table. [2]

	Multiples of 3			
		3		9
Prime numbers	2	5		11
	3	6		

(b) Given that the score is even, find the probability that one of the numbers he picks is 9 [2]
0580/22/O/N/21 Q16)

Fundoo Tutor offers personalized coaching for IGCSE, IB, and SAT students. Need a tutor? http://fundootutor.com/book-a-call/

Answers

1) Sammy and correct reason with 25.7% oe shown	14) (i)1 (ii)3/6
2) (a)(i) Ariven 2/3 > 3/5 oe	15) 2/3
3) 2/7	16) 0.15
4) 5/6	17) 0.2
5) 9/20	18) 7/20
6) 8/15	19) 1/8
7) 30/300	20) (a) 0.6 (b) 20, 0.3, 0.3
8) 22/150	21) 90 , 80 , 68 , 85 , 165 , 90 (b)3/17
9) 94/200	22) (a) 0.4, 0.1 (b) (i)1 (ii)0.7
10) 1/10	23) (a) (i)4/6 (ii) 3/6(iii)2/6 (iv)5/6
11) (i)4/5 (ii)4/5	24) $\frac{37}{60}$
12) (i)4/7 (ii)6/7 (iii)5/7	25) (b)2/5
13) (a)(i)1/6 (ii)4/6 (iii)2/6	

Fundoo Tutor offers personalized coaching for IGCSE, IB, and SAT students. Need a tutor? http://fundootutor.com/book-a-call/