2.3 Systematic Listing: 10-minute Pack

EDEXCEL 1MA1 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Tom flips a fair coin (Heads, Tails) and spins a fair spinner with three equal sections labelled X, Y and Z.
List all the possible outcomes.

(Total for Question 1 is 2 marks)

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2 Erin lists the possible starter-and-main combinations at a cafe, where a customer chooses 1 of 2 starters (soup, salad) and 1 of 3 mains (pasta, curry, fish), as: soup+pasta, soup+curry, salad+pasta, salad+fish.
Give one reason why Erin's list is not a correct systematic list of all the possible combinations.

(Total for Question 2 is 1 mark)

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3 How many different 2-letter arrangements are there using the letters A, B and C if no letter is used more than once?

(Total for Question 3 is 1 mark)

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4 Two fair spinners, each with sections numbered 1, 2, 3 and 4, are spun. The two numbers are added together to give a total.

Spinner A

Spinner B	+	1	2	3	4
	1	2	3		
	2	3			
	3				
	4				8

(a) Complete the sample space diagram to show all 16 possible totals. **(2)**

(b) Use your diagram to find the probability that the total is 5. **(2)**

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(Total for Question 4 is 4 marks)

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Mark scheme · 2.3 Systematic Listing: 10-minute Pack

Question 1

systematic list or table shown, at least 4 correct outcomes **B1**

all 6 outcomes listed with no repeats or omissions **B1**

Answer: HX, HY, HZ, TX, TY, TZ (6 outcomes)

Question 2

correct reason oe, e.g. soup+fish is missing / salad+curry is missing / the list should have 6 combinations but only shows 4 **B1**

Answer: soup+fish and salad+curry are both missing from the list (any valid correct reason about a missing combination or the list being incomplete)

Question 3

6 cao **B1**

Answer: 6

Question 4

(a) at least 8 correct totals entered in the grid **M1**

(a) all 16 totals correct: rows (Spinner B down the side) 2,3,4,5 then 3,4,5,6 then 4,5,6,7 then 5,6,7,8 **A1**

(a) Answer: Grid rows top to bottom: 2,3,4,5 / 3,4,5,6 / 4,5,6,7 / 5,6,7,8

(b) identifies the 4 ways to score a total of 5 out of 16 **M1**

(b) 4/16 oe = 1/4 cao **A1**

(b) Answer: 1/4

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