3.20 Two Way Tables: 30-minute Pack

EDEXCEL 1MA1 · Calculator allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Mrs Ahmed recorded the lunch choices of 60 pupils in the school canteen. The two-way table shows some of the results.

	Sandwich	Hot meal	Total
Year 9	14	16	30
Year 10	10	20	30
Total		36	60

(a) Write down the number of Year 10 students who chose a hot meal. **(1)**

.....

(b) Work out the total number of students who chose a sandwich. **(2)**

.....

(Total for Question 1 is 3 marks)

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2 Mr Nkemelu asked 90 students in Year 10 and Year 11 to name their favourite subject from Maths, English and Science. The completed two-way table shows the results. Find the probability that a student chosen at random named Science as their favourite subject.

Favourite Subject

	Maths	English	Science	Total
Year 10	18	14	8	**40**
Year 11	12	20	18	**50**
Total	**30**	**34**	**26**	**90**

(Total for Question 2 is 2 marks)

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3 A teacher records which pupils passed or failed a short test and whether they are boys or girls. Complete the missing entry in this two-way table.

Passed Failed Total
Boys 28 7 35
Girls ? 5 13
Total 36 12 48

Work out the number of girls who passed.

(Total for Question 3 is 1 mark)

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4 A club surveyed 50 members about whether they play football and whether they are under 18. The two way table is shown.

	Under 18	18 or over	Total
Play football	18	12	30
Do not play	?	10	20
Total	28	22	50

(a) Calculate the missing entry marked ?. **(1)**

.....

(b) Give the probability that a member chosen at random is under 18 and does not play football. **(1)**

(Total for Question 4 is 2 marks)

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5 A two way table gives information about 90 customers in a shop. The table shows whether they bought milk and whether they used a loyalty card.

	Loyalty card	No card	Total
Bought milk	50	10	60
No milk	?	20	30
Total	60	30	90

(a) Work out the missing entry marked ?. **(1)**

.....

(b) Give the probability that a randomly chosen customer both bought milk and used a loyalty card. **(1)**

(Total for Question 5 is 2 marks)

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6 Freya Sinclair organised a charity bake sale where 90 cakes were sold, either Sponge or Chocolate, in the morning or the afternoon. Some of the results are shown in the two-way table below. Complete the two-way table.

Cakes sold at bake sale

	Sponge	Chocolate	Total
Morning	22		
Afternoon			48
Total	52		90

(Total for Question 6 is 5 marks)

7 Year 10 has 24 boys and 39 girls. Year 11 has 28 boys and 23 girls.
Write the ratio of all the boys to all the girls in its simplest form.

(Total for Question 7 is 3 marks)

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8 Of 67 boys, 32 are in Year 10 and the rest are in Year 11. Of 63 girls, 37 are in Year 10 and the rest are in Year 11.
What percentage of the girls are in Year 10? Give your answer correct to 1 decimal place.

(Total for Question 8 is 3 marks)

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9 Tomasz Nowak runs an ice cream stall at a fair. He recorded which flavour was bought by 100 customers, split by Adult and Child. The completed two-way table is shown below.

	Vanilla	Chocolate	Strawberry	Total
Adult	15	25	10	**50**
Child	20	18	12	**50**
Total	**35**	**43**	**22**	**100**

(a) Which flavour was the most popular overall? **(1)**

- ☐ A) Vanilla
- ☐ B) Chocolate
- ☐ C) Strawberry
- ☐ D) Cannot be determined

(b) Work out the probability that a randomly selected customer chose strawberry. **(2)**

.....

(Total for Question 9 is 3 marks)

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Mark scheme · 3.20 Two Way Tables: 30-minute Pack

Question 1

(a) 20 cao	**B1**
(a) Answer: 20	
(b) 14 + 10 oe	**M1**
(b) 24 cao	**A1**
(b) Answer: 24	

Question 2

26/90 oe	**M1**
13/45 oe cao	**A1**
Answer: 13/45	

Question 3

8 cao	**B1**
Answer: 8	

Question 4

(a) 10 cao	**B1**
(a) Answer: 10	
(b) 10/50 cao or 1/5 or 0.2 awrt	**B1**
(b) Answer: 10/50 or 1/5 or 0.2	

Question 5

(a) 10 cao	**B1**
(a) Answer: 10	
(b) 50/90 cao or 5/9 awrt	**B1**
(b) Answer: 50/90 or 5/9	

Question 6

Morning Total = 42 cao	**B1**
Morning Chocolate = 20 cao	**B1**
Afternoon Sponge = 30 cao	**B1**
Afternoon Chocolate = 18 cao	**B1**
Chocolate column Total = 38 cao	**B1**
Answer: Morning Total = 42, Morning Chocolate = 20, Afternoon Sponge = 30, Afternoon Chocolate = 18, Chocolate Total = 38	

Question 7

52:62 found	**M1**
divides by the common factor	**M1**
26:31	**A1**
Answer: 26:31	

Question 8

37 / 63	**M1**
x 100	**M1**
58.7%	**A1**
Answer: 58.7%	

Question 9

(a) B (Chocolate) cao	**B1**
(a) Answer: B) Chocolate	
(b) 22/100 oe	**M1**
(b) 11/50 oe cao	**A1**
(b) Answer: 11/50	

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