3.20F Two Way Tables: Foundation Tier Practice

Total Marks

EDEXCEL Edexcel 1MA1 · Calculator allowed · about 50 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A school asked 60 pupils whether they walk or cycle to school and whether they have a school lunch or a packed lunch. The table below is partly completed.

	Walk	Cycle	Total
School lunch	28	8	36
Packed lunch	20	?	24
Total	48	12	60

Work out the missing entry marked ? in the table.

(Total for Question 1 is 1 mark)

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2 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 ?.
(b) Give the probability that a member chosen at random is under 18 and does not play football.

(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 2 is 2 marks)

3 Priya records whether pupils in her maths class prefer pencils or pens and whether they do homework every day. The table shows the results for 30 pupils.

	Pencil	Pen	Total
Every day	10	6	16
Not every day	?	8	14
Total	16	14	30

Find the missing entry marked ?.

(Total for Question 3 is 2 marks)

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4 A two way table shows types of transport used by 40 students and whether they are in Year 7 or Year 8.

	Year 7	Year 8	Total
Bus	12	8	20
Walk	6	4	10
Cycle	2	8	10
Total	20	20	40

Work out the probability that a student chosen at random is in Year 7 given that they ride the bus. Give your answer as a fraction in lowest terms.

(Total for Question 4 is 3 marks)

5 A survey of 80 families asked whether they have a dog and whether they have a garden. The completed two way table is below.

	Garden	No garden	Total
Have a dog	36	14	50
No dog	10	20	30
Total	46	34	80

Work out the percentage of families who have a dog and a garden. Give your answer to 1 decimal place.

(Total for Question 5 is 3 marks)

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6 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 ?.
(b) Give the probability that a randomly chosen customer both bought milk and used a loyalty card.

(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 6 is 2 marks)

7 A bakery asked 60 customers whether they bought bread and whether they bought cake. The completed two way table is below.

	Bought cake	Did not buy cake	Total
Bought bread	20	10	30
No bread	15	15	30
Total	35	25	60

Work out the probability that a customer bought cake given that they did not buy bread. Give your answer as a fraction in lowest terms.

(Total for Question 7 is 3 marks)

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8 A community centre asked 70 visitors whether they used the gym and whether they attended a class. The partially completed two way table is below.

	Attend class	Do not attend class	Total
Use gym	28	?	40
Do not use gym| 12	?	30	
Total	40	30	70

(a) Work out the value of the entry marked ? in the Use gym row.
(b) Work out the value of the other ? in the Do not use gym row.
(c) Find the probability that a visitor both uses the gym and attends a class.

(a) Work out the value of the entry marked ? in the Use gym row. **(1)**

.....

(b) Work out the value of the other ? in the Do not use gym row. **(1)**

.....

(c) Find the probability that a visitor both uses the gym and attends a class. **(2)**

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(Total for Question 8 is 4 marks)

Mark scheme · 3.20F Two Way Tables: Foundation Tier Practice

Question 1

- **B1** 4 cao
- **Answer: 4**

Question 2

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

Question 3

- **M1** use row total 14 - 8 or column total 16 - 10
- **A1** 6 cao
- **Answer: 6**

Question 4

- **M1** identify conditional probability: Year 7 and bus over total bus = 12/20
- **A1** 12/20 simplified to 3/5 cao
- **B1** answer given in lowest terms 3/5 cao
- **Answer: 3/5**

Question 5

- **M1** calculate fraction 36/80 or 36 divided by 80
- **A1** 0.45 or 45% intermediate
- **A1** 45.0% awrt (to 1 decimal place) cao
- **Answer: 45.0%**

Question 6

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

Question 7

- **M1** identify conditional probability: No bread and bought cake over total No bread = 15/30
- **A1** 15/30 simplified to 1/2 cao
- **B1** answer in lowest terms 1/2 cao
- **Answer: 1/2**

Question 8

- (a) **B1** 12 cao
- **(a) Answer: 12**
- (b) **B1** 18 cao
- **(b) Answer: 18**
- (c) **M1** write fraction 28/70 or 28 divided by 70
- (c) **A1** 2/5 cao
- **(c) Answer: 28/70 or 2/5**