Two-way tables: 10 practice questions

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Name: _____ Date: _____

Attempt all questions and show your working. Suggested time: 15 to 20 minutes.

Section A: Consolidating (Questions 1-4)

Question 1

Find the missing values a, b, c, d and e in this two-way table.

	Owns a pet	No pet	Total
Year 9	34	a	60
Year 10	b	22	c
Total	72	d	e

Question 2

A survey asked students whether they walk to school.

	Walks	Does not walk	Total
Primary	45	75	120
Secondary	30	90	120
Total	75	165	240

(a) How many secondary students walk to school?

(b) How many students do not walk to school?

(c) How many students were surveyed altogether?

Question 3

A café asked 60 customers whether they like tea.

	Likes tea	Does not like tea	Total
Adults	24	16	40
Teenagers	6	14	20

Total	30	30	60

(a) What percentage of all the customers like tea?

(b) What percentage of the adults like tea?

(c) What percentage of the teenagers like tea?

Question 4

A gym surveyed 100 members. 55 of the members are women. 40 of the women and 20 of the men go to group fitness classes.

Draw a two-way table showing gender (women, men) and whether members go to group classes (yes, no), including totals.

Section B: Standard (Questions 5-10)

Question 5

A phone shop recorded the brand of phone bought by 280 customers.

	Brand A	**Brand B**	**Total**
Under 30	84	36	120
30 and over	48	112	160
Total	132	148	280

(a) What percentage of customers under 30 bought Brand A?

(b) What percentage of customers aged 30 and over bought Brand A?

(c) Does there appear to be a relationship between age group and brand? Explain.

Question 6

Workers were asked how they travel to work.

	Lives in a city	**Lives in a country town**	**Total**
Public transport	90	10	100
Car	60	90	150
Total	150	100	250

(a) What percentage of city workers use public transport?

(b) What percentage of country town workers use public transport?

(c) Of the workers who use public transport, what percentage live in a city?

(d) Is there a relationship between where workers live and how they travel? Explain.

Question 7

A school surveyed 250 students.

	Plays sport	Does not play sport	Total
Left-handed	12	18	30
Right-handed	88	132	220
Total	100	150	250

Is there a relationship between being left-handed and playing sport? Use percentages to support your answer.

Question 8

At a music festival, 200 people were surveyed. 120 bought food, 70 bought merchandise and 40 bought both.

(a) Draw a two-way table with "Bought food (yes, no)" and "Bought merchandise (yes, no)", including totals.

(b) How many people bought neither?

Question 9

120 students were asked whether they like pineapple on pizza.

	Year 9	Year 10	Total
Likes pineapple	18	27	45
Does not like pineapple	42	33	75
Total	60	60	120

One student is chosen at random. Find the probability that the student:

(a) likes pineapple

(b) is in Year 10 and likes pineapple

(c) is in Year 10 and does not like pineapple.

Question 10

In a class of 30 students, a Venn diagram shows that 12 students study French only, 8 study Japanese only, 5 study both languages and the rest study neither.

Draw a two-way table showing "Studies French (yes, no)" and "Studies Japanese (yes, no)", including totals.

Two-way tables: answers

Question 1

Answer: a = 26, b = 38, c = 60, d = 48, e = 120

Question 2

Answer: (a) 30 (b) 165 (c) 240

Question 3

Answer: (a) 50% (b) 60% (c) 30%

Question 4

Answer:

	Classes: yes	Classes: no	Total
Women	40	15	55
Men	20	25	45
Total	60	40	100

Question 5

Answer: (a) 70% (b) 30% (c) Yes. Younger customers were much more likely to buy Brand A (70% compared with 30%).

Question 6

Answer: (a) 60% (b) 10% (c) 90% (d) Yes: city workers are far more likely to use public transport (60% against 10%).

Question 7

Answer: No. 40% of left-handed students play sport (12/30) and 40% of right-handed students play sport (88/220); the percentages are the same.

Question 8

Answer: (a)

	Merchandise: yes	Merchandise: no	Total
Food: yes	40	80	120
Food: no	30	50	80

Total	70	130	200

(b) 50

Question 9

Answer: (a) ⅜ (45/120, also accept 0.375) (b) 9/40 (27/120, also accept 0.225) (c) 11/40 (33/120, also accept 0.275)

Question 10

Answer:

	Japanese: yes	**Japanese: no**	**Total**
French: yes	5	12	17
French: no	8	5	13
Total	13	17	30