2.104 Two-Way Tables and Venn Diagram Reasoning: 10-minute Pack

Total Marks

GL ASSESSMENT GL-11PLUS-MATHS · Calculators not allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A class completes a survey about owning a tablet and owning a smartphone. The table shows some counts.

	Smartphone Yes	Smartphone No	Total
Tablet Yes	8	4	12
Tablet No	6	6	12
Total	14	10	24

How many pupils own both a tablet and a smartphone?

- ☐ A) 12
- ☐ B) 14
- ☐ C) 4
- ☐ D) 6
- ☐ E) 8

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2 In a class of 23 pupils, 9 like pizza, 10 like pasta and 8 do both. How many pupils do only the second activity (like pasta)?

- ☐ A) 2
- ☐ B) 19
- ☐ C) 4
- ☐ D) 11
- ☐ E) 1

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3 In a class of 30 pupils, 15 study French, 23 study Spanish and 11 do both. How many pupils do neither?

- [ ] A) 27
- [ ] B) 2
- [ ] C) 14
- [ ] D) 38
- [ ] E) 3

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4 In a class of 49 pupils, 28 like pizza, 36 like pasta and 27 do both. How many pupils do only the first activity (like pizza)?

- [ ] A) 9
- [ ] B) 39
- [ ] C) 37
- [ ] D) 1
- [ ] E) 64

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5 In a class of 23 pupils, 13 play football, 9 play tennis and 3 do both. How many pupils do only the second activity (play tennis)?

- [ ] A) 6
- [ ] B) 1
- [ ] C) 22
- [ ] D) 7
- [ ] E) 5

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6 In a class of 25 pupils, 12 play football, 14 play tennis and 8 do both. How many pupils do only the first activity (play football)?

- [ ] A) 15
- [ ] B) 5
- [ ] C) 4
- [ ] D) 26
- [ ] E) 18

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7 In a class of 29 pupils, 10 have a dog, 14 have a cat and 4 do both. How many pupils do only the first activity (have a dog)?

- ☐ A) 24
- ☐ B) 10
- ☐ C) 5
- ☐ D) 7
- ☐ E) 6

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8 In a class of 30 pupils, 9 play football, 17 play tennis and 2 do both. How many pupils do neither?

- ☐ A) 7
- ☐ B) 24
- ☐ C) 26
- ☐ D) 4
- ☐ E) 6

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9 From this table we see pupils who bring packed lunch and those who bring lunch money.

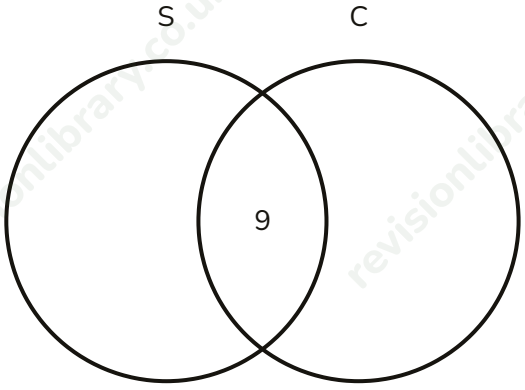
	Packed lunch Yes	Packed lunch No
Lunch money Yes	10	4
Lunch money No	6	10

How many pupils bring neither packed lunch nor lunch money?

- ☐ A) 30
- ☐ B) 16
- ☐ C) 4
- ☐ D) 10
- ☐ E) 6

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10 A Venn diagram shows pupils who like swimming (S) and pupils who like cycling (C). 20 pupils like swimming, 16 like cycling and 9 like both. How many pupils like either swimming or cycling or both?



(2)

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Mark scheme · 2.104 Two-Way Tables and Venn Diagram Reasoning: 10-minute Pack

A correct answer earns full marks unless the question asks for working, a method, proof or explanation.

Question 1

correct option E (8) cao **B1**

Answer: E) 8

Question 2

correct option A (2) cao **B1**

Answer: A) 2

Question 3

correct option E (3) cao **B1**

Answer: E) 3

Question 4

correct option D (1) cao **B1**

Answer: D) 1

Question 5

correct option A (6) cao **B1**

Answer: A) 6

Question 6

correct option C (4) cao **B1**

Answer: C) 4

Question 7

correct option E (6) cao **B1**

Answer: E) 6

Question 8

correct option E (6) cao **B1**

Answer: E) 6

Question 9

correct option D (10) cao **B1**

Answer: D) 10

Question 10

apply inclusion-exclusion: 20 + 16 - 9 seen **M1**

27 cao **A1**

Answer: 27 (20 + 16 - 9 = 27)

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