2.15 Logic and Puzzle Problems: 10-minute Pack

GL ASSESSMENT GL11-MATHS-LOGIC · Calculators not allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 In this 3 by 3 grid, every row and every column adds up to 15: Row 1: 2, 7, 6. Row 2: 9, a, 1. Row 3: 4, 3, b.

(a) Find the value of a. **(2)**

.....

(b) Find the value of b. **(2)**

.....

2 In a school race with runners David, Zara, Oliver, Priya and Ethan: Oliver finished before Priya but after Zara. Priya finished before Ethan. Zara did not finish first. David finished immediately before Zara. Work out the finishing order from 1st to 5th.

(4)

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3 In a class of 30 pupils, 18 play football, 15 play cricket, and 7 play both football and cricket.

(a) Find the number of pupils who play football only, and the number who play cricket only. **(3)**

.....

(b) How many pupils play neither football nor cricket? **(2)**

.....

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Mark scheme · 2.15 Logic and Puzzle Problems: 10-minute Pack

Question 1

(a) 9+a+1=15 (oe)	**M1**
(a) a=5 cao	**A1**
(a) Answer: 5	
(b) 6+1+b=15 (oe)	**M1**
(b) b=8 cao	**A1**
(b) Answer: 8	

Question 2

David finishes immediately before Zara, and Zara is not first, so David must be first (oe)	**M1**
chain Zara < Oliver < Priya < Ethan gives the remaining order (oe)	**M1**
correct full order: David, Zara, Oliver, Priya, Ethan	**A1**
all four clues checked against the final order (oe)	**A1**
Answer: David, Zara, Oliver, Priya, Ethan (1st to 5th)	

Question 3

(a) 18-7=11 (football only) (oe)	**M1**
(a) 15-7=8 (cricket only) (oe)	**M1**
(a) football only=11 and cricket only=8, both cao	**A1**
(a) Answer: Football only: 11, Cricket only: 8	
(b) 11+8+7=26 playing at least one sport (ft from a)	**M1**
(b) 30-26=4 cao	**A1**
(b) Answer: 4 pupils	

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