2.33-3 Problem Solving and Logic Set C: Test Pack

GL ASSESSMENT GL · Calculators not allowed · about 15 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Amelia is 9 years old. Her brother Kavi is 4 years older than her. How old is Kavi?

(1)

2 A fruit squash is made by mixing orange concentrate and water in the ratio 2:5. How much orange concentrate is needed to make 700 ml of squash?

(3)

3 A sequence starts 3, 7, 15, 31, 63, ...
Describe the rule connecting one term to the next, and use it to find the next term in the sequence.

(3)

4 Jack has a number of coins made up only of 50p coins and £2 coins. He has 4 more 50p coins than £2 coins. The total value of his coins is £17. How many £2 coins does he have?

(4)

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5 At a school fete, adult raffle tickets cost £3 each and child tickets cost £1.50 each. On Saturday, three times as many child tickets were sold as adult tickets, and the total raised was £90. On Sunday, half as many adult tickets were sold as on Saturday, but the same number of child tickets were sold as on Saturday. How much was raised in total on Sunday?

(5)

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6 All squares are rectangles. Some rectangles are red.
Which statement must be true?

- ☐ A) All squares are red.
- ☐ B) Some squares are red.
- ☐ C) All rectangles are squares.
- ☐ D) It cannot be determined whether any squares are red.

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Mark scheme · 2.33-3 Problem Solving and Logic Set C: Test Pack

Question 1

13 cao	**B1**

Answer: 13

Question 2

total parts = 2 + 5 = 7	**M1**
700 / 7 = 100 ml per part	**M1**
200 ml cao	**A1**

Answer: 200 ml

Question 3

correctly states the rule: double the previous term and add 1 oe	**B1**
applies the rule to 63: 63 x 2 + 1	**M1**
127 cao	**A1**

Answer: 127

Question 4

lets the number of £2 coins = x, so the number of 50p coins = x + 4	**M1**
forms the equation 2x + 0.5(x + 4) = 17 oe	**M1**
simplifies to 2.5x = 15 (dependent on previous M1)	**dM1**
6 cao	**A1**

Answer: 6

Question 5

lets Saturday adult tickets = a, so child tickets = 3a, and forms 3a + 1.5(3a) = 90 oe	**M1**
simplifies and solves to a = 12	**M1**
Saturday child tickets = 3 x 12 = 36 (ft from a)	**B1**
Sunday adult tickets = 6, Sunday child tickets = 36; revenue = 6 x 3 + 36 x 1.5	**M1**
£72 cao	**A1**

Answer: £72

Question 6

D cao	**B1**

Answer: D) It cannot be determined whether any squares are red.

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