3.5 Ratio: 30-minute Pack

EDEXCEL 1MA1 · Calculator allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Share 28 sweets between A and B in the ratio 3:1. How many sweets does B get?

(Total for Question 1 is 2 marks)

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2 A map uses scale 1:50 000. A path measured on the map is 6 cm long. Work out the actual length of the path in metres.

(Total for Question 2 is 4 marks)

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3 A community garden has 24 tulip bulbs and 18 daffodil bulbs. Write the fraction of the bulbs that are tulip bulbs. Give your answer in its simplest form.

(Total for Question 3 is 2 marks)

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4 Simplify the ratio 84 : 126.

(Total for Question 4 is 1 mark)

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5 A 750 ml bottle of squash costs £2.40. A 1.2 litre bottle of the same squash costs £3.60. By comparing the price per 100 ml, determine which bottle offers better value for money.

(Total for Question 5 is 4 marks)

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6 A paint mix uses white:grey in the ratio 5:2. A decorator needs 21 litres of grey. Work out how many litres of paint the decorator needs in total.

(a) Find the amount corresponding to one share. **(2)**

.....

(b) Using your answer to part (a), find the total litres of paint required. **(3)**

.....

(Total for Question 6 is 5 marks)

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7 In a choir, the ratio of sopranos to altos is 4 : 5. The ratio of altos to tenors is 3 : 2. Find the ratio of sopranos : altos : tenors in its simplest form.

(Total for Question 7 is 3 marks)

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8 Ten years ago, the ratio of Priya's age to her mother's age was 1 : 4. Priya is now 25 years old. Find her mother's current age.

(Total for Question 8 is 4 marks)

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Mark scheme · 3.5 Ratio: 30-minute Pack

Question 1

Find one share: 28 divided by (3+1) = 7 (method)	**M1**
7 sweets cao	**A1**

Answer: 7 sweets

Question 2

Convert map length to actual: 6 cm corresponds to 6 x 50 000 cm = 300 000 cm (method)	**M1**
Convert cm to metres: 300 000 cm = 3000 m (method)	**M1**
3000 m cao	**A1**
final answer given with correct unit	**B1**

Answer: 3000 m

Question 3

total bulbs = 24 + 18 = 42, fraction = 24/42	**M1**
4/7 (oe, cao)	**A1**

Answer: 4/7

Question 4

2 : 3 cao	**B1**

Answer: 2 : 3

Question 5

finds price per 100 ml for the 750 ml bottle: (240/750) x 100 (oe)	**M1**
32p per 100 ml	**A1**
finds price per 100 ml for the 1.2 litre bottle: (360/1200) x 100 (oe)	**M1**
30p per 100 ml (ft), with correct conclusion that the 1.2 litre bottle is better value	**A1**

Answer: The 1.2 litre bottle is better value (30p per 100 ml compared with 32p per 100 ml)

Question 6

(a) 21 corresponds to 2 shares so one share = 21/2 = 10.5 (method)	**M1**
(a) 10.5 litres cao	**A1**

(a) Answer: 10.5 litres

(b) Total shares = 5+2 =7 so total = 7 x 10.5 = 73.5 (method)	**M1**
(b) Use units correctly and show multiplication result	**M1**
(b) 73.5 litres cao	**A1**

(b) Answer: 73.5 litres

Question 7

finds a common value for altos, e.g. LCM(5, 3) = 15	**M1**
scales both ratios: sopranos:altos = 12:15 and altos:tenors = 15:10	**M1**
12 : 15 : 10 (cao)	**A1**

Answer: 12 : 15 : 10

Question 8

Priya's age 10 years ago = 25 - 10 = 15	**M1**
uses the ratio to find her mother's age 10 years ago: 15 x 4 = 60	**M1**
adds 10 years back on: 60 + 10	**M1**
70 (cao)	**A1**

Answer: 70 years old

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