3.5F Ratio: Foundation Tier Practice

EDEXCEL Edexcel 1MA1 · Calculator allowed · about 50 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Write 3 to 8 as a ratio in its simplest form.

(Total for Question 1 is 1 mark)

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2 Express the ratio 12:20 in its simplest form.

(Total for Question 2 is 1 mark)

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3 A recipe uses sugar and flour in the ratio 1:4. How many grams of flour are needed for 75 g of sugar?

(Total for Question 3 is 2 marks)

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

(Total for Question 4 is 2 marks)

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5 The angles of a triangle are in the ratio 2:3:5. Work out the size of the largest angle.

(Total for Question 5 is 3 marks)

6 A class has boys and girls in the ratio 5:7. If there are 35 boys, how many pupils are there in total?

(Total for Question 6 is 3 marks)

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7 Mix paint in the ratio red:blue = 2:5. How much red paint is needed for 35 litres of the mix?

(Total for Question 7 is 3 marks)

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8 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 8 is 4 marks)

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9 Ali and Zahra share money in the ratio 7:3. After Zahra receives 120 pounds, Ali has 280 pounds. Work out how much money they shared in total.

(Total for Question 9 is 4 marks)

10 A bowl contains fruit in the ratio apples:pears:bananas = 4:2:3. There are 36 pieces of fruit in the bowl. How many apples are there?

(Total for Question 10 is 4 marks)

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11 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)**

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

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(Total for Question 11 is 5 marks)

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12 A carton contains orange and black sweets in the ratio 9:7. After 16 orange sweets are eaten, the ratio of orange to black becomes 5:4. How many black sweets were in the carton at the start?

(Total for Question 12 is 4 marks)

Mark scheme · 3.5F Ratio: Foundation Tier Practice

Question 1

- **B1** 3:8 cao
- **Answer: 3:8**

Question 2

- **B1** 3:5 cao
- **Answer: 3:5**

Question 3

- **M1** Use unitary method: 75 g sugar corresponds to 75 x 4 = 300 g flour (method shown)
- **A1** 300 g cao
- **Answer: 300 g**

Question 4

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

Question 5

- **M1** Method to find size per part: 180 divided by (2+3+5)=180/10=18 oe
- **M1** Multiply 18 by 5 to get largest angle (method)
- **A1** 90 degrees cao
- **Answer: 90 degrees**

Question 6

- **M1** Find one share: 35 corresponds to 5 so one share = 35/5 = 7 (method)
- **M1** Total shares = 5+7 =12 so total pupils = 12 x 7 = 84 (method)
- **A1** 84 pupils cao
- **Answer: 84 pupils**

Question 7

- **M1** One share: 35 divided by (2+5)=35/7=5 (method)
- **M1** Red amount = 2 x 5 = 10 litres (method)
- **A1** 10 litres cao
- **Answer: 10 litres**

Question 8

- **M1** 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)
- **A1** 3000 m cao
- **B1** final answer given with correct unit
- **Answer: 3000 m**

Question 9

- **M1** Use the ratio to find one share: Zahra has 3 shares = 120 so one share = 120/3 = 40 (method)
- **M1** Ali has 7 shares so Ali = 7 x 40 = 280 (method shown matching given)
- **M1** Total shares = 7+3 = 10 so total = 10 x 40 = 400
- **A1** £400 cao
- **Answer: 400 pounds**

Question 10

- **M1** Find one share: 36 divided by (4+2+3)=36/9=4 (method)
- **M1** Apples = 4 x 4 = 16 (method)
- **A1** 16 cao
- **B1** final answer with correct unit or context
- **Answer: 16 apples**

Question 11

- (a) **M1** 21 corresponds to 2 shares so one share = 21/2 = 10.5 (method)
- (a) **A1** 10.5 litres cao
- **(a) Answer: 10.5 litres**
- (b) **M1** Total shares = 5+2 =7 so total = 7 x 10.5 = 73.5 (method)
- (b) **M1** Use units correctly and show multiplication result
- (b) **A1** 73.5 litres cao
- **(b) Answer: 73.5 litres**

Question 12

- **M1** Let k be the common factor: initially orange = 9k, black = 7k. After eating 16 orange, (9k - 16) : 7k = 5 : 4. Set up equation
- **M1** Cross-multiply: 4(9k - 16) = 5(7k) -> 36k - 64 = 35k (method)
- **M1** Solve for k: 36k - 35k = 64 -> k = 64 (method)
- **A1** Black sweets initially = 7k = 7 x 64 = 448 cao
- **Answer: 448 black sweets**