



KS3.M-R5 Direct Proportion and the Unitary Method

AQA KS3.M-R5 · Calculators not allowed · about 45 minutes

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

1 Write down the unit fraction for each quantity.

(a) What is 1 of 12 as a fraction of a whole? (1)

(b) What is 1 of 8 as a fraction of a whole? (1)

(c) What is 1 of 20 as a fraction of a whole? (1)

(d) What is 1 of 5 as a fraction of a whole? (1)

2 A recipe makes 6 pancakes using 300 g of flour. How much flour is needed for 1 pancake?

(2)

3 Scale the recipe amounts down to one portion.

(a) A soup recipe serves 4 and needs 800 ml of stock. How much stock for 1 serving? (1)

.....

(b) A tray of muffins makes 12 and uses 360 g sugar. How much sugar per muffin? (1)

.....

(c) A batch of 9 cookies uses 270 g butter. What is the butter for 1 cookie? (1)

.....

4 Omar buys 5 apples for 2.50 pounds. What is the unit price for one apple?

(2)

5 Write as a ratio in simplest form: 300 g of flour to 2 cups of flour.

(2)

6 A drinks company makes 24 bottles using 3 litres of juice concentrate. How much concentrate is needed for 10 bottles?

(a) Find the amount of concentrate for 1 bottle. (1)

.....

(b) Use your answer to find concentrate for 10 bottles. (2)

.....

7 Which is better value: 6 cans for 3.30 pounds or 10 cans for 5.25 pounds? Show your working.

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(3)

8 A cake recipe uses 250 g of sugar to serve 5. How much sugar is needed to serve 8 people?

(2)

Mark scheme · KS3.M-R5 Direct Proportion and the Unitary Method

Question 1

- (a) **B1** $1/12$ cao
- (a) Answer: **1/12**
- (b) **B1** $1/8$ cao
- (b) Answer: **1/8**
- (c) **B1** $1/20$ cao
- (c) Answer: **1/20**
- (d) **B1** $1/5$ cao
- (d) Answer: **1/5**

Question 2

- **M1** Divide 300 by 6 or show $300/6$ method
- **A1** 50 g cao
- Answer: **50 g**

Question 3

- (a) **B1** 200 ml cao
- (a) Answer: **200 ml**
- (b) **B1** 30 g cao
- (b) Answer: **30 g**
- (c) **B1** 30 g cao
- (c) Answer: **30 g**

Question 4

- **M1** Divide 2.50 by 5 or $250p/5$ shown
- **A1** 0.50 pounds cao
- Answer: **0.50 pounds**

Question 5

- **M1** Divide both parts by 2 or show simplification method
- **A1** 150:1 cao
- Answer: **150:1**

Question 6

- (a) **B1** 0.125 litres or 125 ml cao
- (a) Answer: **0.125 litres**
- (b) **M1** Multiply 0.125 by 10 or equivalent method
- (b) **A1** 1.25 litres cao
- (b) Answer: **1.25 litres**

Question 7

- **M1** Find unit price for 6 cans: $3.30/6$ or equivalent shown
- **M1** Find unit price for 10 cans: $5.25/10$ or equivalent shown
- **A1** State better value: 10 cans for 5.25 pounds cao
- Answer: **10 cans for 5.25 pounds**

Question 8

- **M1** Find sugar per person: $250/5$ shown
- **A1** 400 g cao
- Answer: **400 g**