FOUNDATION & HIGHER

SAME AT BOTH TIERS

Name ..... Class .....

R4: Ratio

Solve problems using ratio notation

20 marks · 25 minutes · Non-calculator

1) A recipe uses 450 g of flour, 0.3 kg of sugar and 150 g of butter. Write the ratio flour : sugar : butter in its simplest form.

.....

[Question 1: 2 marks]

2) The ratio of boys to girls in a club is 3 : 4. 6 more boys join and the ratio becomes 1 : 1. How many girls are there?

.....

[Question 2: 3 marks]

3) On a map, 3 cm represents 1.5 km. Write the scale in the form 1 : *n*.

.....

[Question 3: 2 marks]

4) Paint is mixed in the ratio red : white = 2 : 5. Ella has 1.2 litres of red and 2.5 litres of white mixed together. How much more white must she add to get the correct ratio?

..... litres

[Question 4: 3 marks]

5) Write 1 hour 20 minutes : 45 minutes : 2 hours in its simplest form.

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[Question 5: 2 marks]

6) The ages of a child and parent are in the ratio 2 : 5. In 12 years' time the ratio will be 1 : 2. Find their ages now.

.....

[Question 6: 4 marks]

7) Concrete is mixed with cement and sand in the ratio 1 : 3. Jo has 20 kg of cement and 50 kg of sand. Which runs out first? What is the greatest mass of concrete she can make?

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[Question 7: 4 marks]

End of paper – 20 marks in total

Answers and brief mark scheme

Q	Answer	Method / notes
1	3 : 2 : 1	450 : 300 : 150 (P1); A1.
2	24	$3k + 6 = 4k$ (P1); $k = 6$ (P1); A1.
3	1 : 50 000	150 000 cm (P1); A1.
4	0.5	1.2 red needs 3 litres of white (P1, P1); 3 – 2.5 (A1).
5	16 : 9 : 24	80 : 45 : 120 (P1); A1.
6	24 and 60	$\frac{2k + 12}{5k + 12} = \frac{1}{2}$ (P1, P1); $k = 12$ (P1); A1.
7	Sand; 66.7 kg	20 kg cement needs 60 kg sand (P1); sand runs out (A1); 50 kg sand uses 16.7 kg cement (P1); 66.7 (A1).