FOUNDATION & HIGHER

SAME AT BOTH TIERS

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

R6: Multiplicative relationships

Solve problems involving ratios and fractions as multiplicative relationships

20 marks · 25 minutes · Non-calculator

1) Ali has 3 times as many stickers as Ben. Ali gives Ben 20 stickers and they now have the same number. How many did Ali have at first?

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[Question 1: 3 marks]

2) The length and width of a rectangle are in the ratio 5 : 2. Its perimeter is 56 cm. Find its area.

..... cm^2

[Question 2: 3 marks]

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3) A is $\frac{2}{3}$ of B and B is $\frac{3}{4}$ of C. $C = 36$. Find A and the ratio $A : B : C$.

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[Question 3: 3 marks]

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4) A coffee costs 1.5 times as much as a tea. 2 coffees and 3 teas cost £9. Find the cost of a coffee.

£ .....

[Question 4: 3 marks]

5) $y = \frac{4x}{5}$. By how much does y increase when x increases by 10?

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[Question 5: 2 marks]

6) The number of red beads is 60% of the number of blue beads. There are 64 beads in total. How many are red?

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[Question 6: 3 marks]

7) Car A travels at $\frac{4}{3}$ of the speed of car B. Car B takes 2 hours for a journey. How long does car A take for the same journey?

..... hours

[Question 7: 3 marks]

End of paper – 20 marks in total

Answers and brief mark scheme

Q	Answer	Method / notes
1	60	$3b - 20 = b + 20$ (P1, P1); $b = 20$, Ali 60 (A1).
2	160	$14k = 56$ (P1); sides 20 and 8 (P1); A1.
3	18; 2 : 3 : 4	$B = 27$ (P1); $A = 18$ (A1); ratio (A1).
4	£2.25	$3t + 3t = 9$ (P1, P1); A1.
5	8	$\frac{4}{5} \times 10$ (P1); A1.
6	24	Red : blue = 3 : 5 (P1, P1); A1.
7	1.5	Time ratio 3 : 4 (P1, P1); A1.