FOUNDATION & HIGHER

SAME AT BOTH TIERS

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

R1: Converting units

Reason when converting standard and compound units

20 marks · 25 minutes · Non-calculator

1) Show that 3.5 hours is 210 minutes.

[Question 1: 1 marks]

2) Explain why $1\,m^3 = 1\,000\,000\,cm^3$

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[Question 2: 2 marks]

3) Ben converts $5\,m^2$ to cm^2 and gets $500\,cm^2$. Explain his mistake.

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[Question 3: 2 marks]

4) Show that 54 km/h is the same as 15 m/s.

[Question 4: 2 marks]

5) Which is heavier, 2.4 kg or 2350 g? Explain.

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[Question 5: 2 marks]

6) Show that a density of 2.7 g/cm^3 is the same as 2700 kg/m^3.

[Question 6: 2 marks]

7) Ella is paid £11.40 per hour. Show that this is 19p per minute.

[Question 7: 2 marks]

8) Explain why x minutes is $\frac{x}{60}$ hours.

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[Question 8: 1 marks]

9) A car uses 8 litres of fuel per 100 km. Jo says this is 25 km per litre. Explain her mistake.

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[Question 9: 2 marks]

10) Show that 0.5 litres is 500 cm^3.

[Question 10: 1 marks]

11) Which is faster, 30 m/s or 100 km/h? Show how you decide.

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[Question 11: 2 marks]

12) Explain why 1 km^2 = 1 000 000 m^2

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[Question 12: 1 marks]

End of paper – 20 marks in total

Answers and brief mark scheme

Q	Answer	Method / notes
1	Shown	3.5×60 (C1).
2	Explanation	1 m = 100 cm in each of three dimensions (M1); 100^3 (C1).
3	50 000 cm^2	He multiplied by 100, not 100^2 (C1); B1.
4	Shown	$54\,000 \div 3600$ (M1); C1.
5	2.4 kg	2400 g > 2350 g (M1); C1.
6	Shown	$\times 1\,000\,000 \div 1000$ (M1); C1.
7	Shown	$1140 \div 60$ (M1); C1.
8	Explanation	60 minutes in an hour (C1).
9	12.5 km per litre	She divided the wrong way (C1); $100 \div 8$ (B1).
10	Shown	1 litre = 1000 cm^3 (C1).
11	30 m/s	30×3.6 = 108 km/h (M1); C1.
12	Explanation	1000^2 (C1).