Topic Test 1 Mark Scheme

Ratio and Proportion - Higher

Q	Answer	Mark	Comments
1(a)	$y = \frac{x}{5}$	B1	
1(b)	5 + 1 : 5 – 1	M1	
	6 : 4 (= 3 : 2)	A1	
2	**Alternative method 1**		
	630 ÷ 100 × 125 or 787.5	M1	oe Works out calories in 90 nuts
	their 787.5 ÷ 90	M1dep	
	8.75	A1	oe Accept 9 with working
	Alternative method 2		
	90 ÷ 125 × 100 or 72	M1	oe Nuts per 100 g
	630 ÷ their 72	M1dep	
	8.75	A1	oe Accept 9 with working
3	2 parts → 9	M1	oe eg 1 : 3, 2 : 6, ... 4.5 : 13.5
	9 ÷ 2 × 6	M1	oe eg 4.5 : 13.5 : 27
	27	A1	

Q	Answer	Mark	Comments
4	**Alternative method 1**		
	$6 \div (\frac{1}{2} + \frac{1}{4})$ or 8 (portions)	M1	oe eg $\frac{1}{2} : \frac{1}{4} = 4 : 2$
	their $8 \times \frac{1}{2} \times 80$ or 320	M1dep	oe eg 4×80
	their $8 \times \frac{1}{4} \times 100$ or 200	M1dep	dependent on first M oe eg 2×100
	520	A1	
	Alternative method 2		
	$6 \div (\frac{1}{2} + \frac{1}{4})$ or 8 (portions)	M1	oe
	$\frac{1}{2} \times 80 + \frac{1}{4} \times 100$ or 65	M1	
	their 40 + their 65 × their 8	M1dep	dependent on both Ms
	520	A1	
5	$(12.5 - 2) \div 5 \times 2$ or 4.2	M1	oe
	$(7.5 - 1) \div 5 \times 2$ or 2.6	M1	oe
	(6.2, 3.6)	A2	A1 for each correct coordinate

Q	Answer	Mark	Comments
6	**Alternative method 1**		
	$4x - 25$ and $3x$	M1	
	$\frac{4x-25}{3x} = \frac{7}{9}$ or $x = 15$	M1dep	oe eg $9(4x - 25) = 21x$
	45	A1	
	Alternative method 2		
	Two ratios equivalent to 4 : 3 and 7 : 9 with the second parts common	M1	eg 12 : 9 and 7 : 9
	Builds up their ratios until the first parts have a difference of 25	M1dep	eg 24 : 18, 14 : 18 36 : 27, 21 : 27 60 : 45, 35 : 45
	45	A1	