Ratios (inc Scales)

Mark Scheme 1

Level	IGCSE
Subject	Maths (0580)
Exam Board	Cambridge International Examinations (CIE)
Paper Type	Extended
Topic	Number
Sub-Topic	Ratios (inc Scales)
Booklet	Mark Scheme 1

Time Allowed: **64 minutes**

Score: **/52**

Percentage: **/100**

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	75%	60%	45%	35%	25%	<25%

1	460	**2**	**B1** for 1 cm^2 : 100 km^2 oe or **M1** for 4.6 × 1 000 000² ÷ 100 000² oe seen

2	**(a) (i)**	36 600	**3**	**M2** for 6100 ÷ 2 × (2 + 7 + 3) oe or **M1** for 6100 ÷ 2 soi
	(ii)	$16\frac{2}{3}$ or 16.7 [16.66 to 16.67]	**1**	
	(b)	1 231 708 final answer nfww	**5**	**M4** for 5964 × 15 + 28400 × 35 + 8236 × 18 or **M3** for 5964 × 15 **and** 28 400 × 35 or for 5964 × 15 + 42 600 × *their* decimal $\frac{2}{3}$ × 35 + (42 600 – 5964 – 42 600 × *their* decimal $\frac{2}{3}$) × 18 or **M2** for 5964 × 15 **or** 28 400 × 35 or for 42 600 × *their* decimal $\frac{2}{3}$ × 35 or **M1** for 0.14 × 42 600 or 42 600 ÷ 3 × 2
	(c)	27.2[0] nfww	**5**	**M** for 23.80 ÷ 0.7 oe or **M1** for 23.80 associated with 70% oe and **M2** for *their* (23.80 ÷ 0.7) × 0.8 or **M1** for *their* (23.80 ÷ 0.7) × 0.2

3	168	**2**	**M1** for 240 ÷ (7 + 3) or better

4	**(a)**	1848 final answer	**2**	**M1** for $1650 \times \left(1+\frac{12}{100}\right)$ oe
	(b) (i)	1750	**2**	**M1** for $\frac{500}{9-5}$ [×5] or [×9] or any equation which would lead to $4x = 500$ or $4x = 2500$ or $4x = 4500$ or $4x = 7000$ when simplified
	(ii)	$64\frac{2}{7}$ or 64.3 or 64.28 to 64.29	**1**	
	(c) (i)	33 : 20 oe	**2**	**B** for 33 : 6 or 20 : 6 or 5.5 oe seen or 3.33…oe seen or **M1** for two ratios with a common number of children implied by $20k$ **and** $33k$ seen, $k > 0$
	(ii)	236	**3**	**M2** for $\frac{24}{2} \times 11 + \frac{24}{3} \times 10$ oe or $((3 \times 11) + (2 \times 10)) \times 24 \div 6$ or $\frac{6}{6+20+33} \times x = 24$ or **M1** for $\frac{24}{2} \times 11$ or $\frac{24}{2} \times 13$ soi or $\frac{24}{3} \times 10$ or $\frac{24}{3} \times 13$ soi oe or $24 \div 6$ soi
	(d)	17[.00]	**3**	**M2** for $20.40 \div \left(1+\frac{20}{100}\right)$ oe or **M1** for (100 + 20)% oe associated with 20.40 seen

5	628	**2**	**M1** for $\frac{785}{1+4}[\times 4]$

6	0.3	**2**	**M1** for $\frac{k \times 50\,000 \times 50\,000}{100\,000 \times 100\,000}$ oe If zero scored **SC1** for figs 3

7	**(a)**	123 to 127	**1**	
	(b)	288 to 292	**1**	
	(c)	[1:] 1 000 000	**1**	
	(d)	Correct ruled perpendicular bisector of *CB* with correct arcs Correct two pairs of arcs	**2**	**B1** for correct perpendicular bisector without/wrong arcs
		Correct ruled bisector of angle *ACB* with correct pair of arcs	**2**	**B1** for correct bisector of angle *ACB* without/wrong arcs
		Ruled line parallel to *CB* in triangle	**1**	Provided this line is not the perpendicular bisector of *AC*
		1.3 to 1.7 cm from *CB* in triangle	**1**	
		Correct region indicated	**1dep**	Dependent on at least B1,B1,1,1 earned
	(e)	40	**2**	**M1** for 0.4×10^2 oe

8	**400** 350	**3**	**M1** for $\frac{1000}{8+7+5}$ implied by 50 **A1** for one clearly assigned correct answer or **SC2** for 3 correct answers in wrong order

9	–1	**2**	**M** for 4×6.5