IGCSE Maths May 2007 Paper 2F Mark Scheme Post-Standardisation

In equation questions, substitution or T & I methods score full marks or none.

1ai		199, 999, 1009, 1999, 9000	1	B1
ii		9000	1	B1
iii		999 or 9000	1	B1
bi		4321	1	B1
ii		1243	2	B2 B1 for begin with 1 or end with 1 or 3
Total			**6**	
2		A at 0.5 $\pm$ 2mm	1	B1
		B at 1	1	B1
		C at $2 \leq d \leq 25$mm from 0	1	B1 ie between 0 & 0.25 exclusive
Total			**3**	
3ai,ii,iii		Radius, chord, tangent	3	B1B1B1 allow misspellings
b		Sector	1	B1 allow misspellings
Total			**4**	
4a		21	1	B1
b		3	1	B1 or 3000 or 3 thousand
c				or 1000 or thousands
		3970	1	B1
d		4000	1	B1
e		63	1	B1
fi		15.83289…	1	B1
ii		15.8	1	B1ft
Total			**7**	
5a	$4 \times 5 + 2$			M1
		22	2	A1
b	28 / 4			M1 Allow 30/4 or ans 7.25 oe
		7	2	A1
Total			**4**	
6a		$^{12}/_{36}$	1	B1
b		$^{3}/_{10}$	1	B1
c	Attempt convert all to dec or % or c. d.			M1
	All correctly converted			M1
		$^{9}/_{25}$	3	A1
Total			**5**	

7	2 × 1.10 + 3 × 1.25 or 5.95 10.00 – "5.95"	 4.05	 3	M1 M1dep A1
Total			**3**	
8a b c di ii e	 *x* attempted or 56 / 8 Arrange in order	3 7 5.5 oe Same Middle unchanged 2/8 oe	1 3 2 1 1 2	B1 M1 eg 48.125 M1 dep A1 M1 or answer 5 or 6 A1 B1indep B1 or still 5.5 B1 num B1 denom Ratio subtr B1
Total			**10**	
9a b	 	6 cm^2 Triangle correct ± 2 mm	 3 2	B2 B1 for 5 to 7 incl B1 B2 B1 for a vertex correct ± 2 mm or correct size & orientation ± 2 mm
Total			**5**	
10a b c d	(6 + 3) × 5 oe 70/5 or 14 (-3) -85/5 – 3 or -17 – 3	 45 11 -20 5(*x* + 3) or (*x* + 3) × 5 or 5*x* + 15 oe	 2 2 2 2	M1 Bracket essential unless ans correct A1 M1 Allow 67/5 or 13.2 A1 M1 A1 B2 B1 for answer *x* + 3 × 5. B0 for answer 5*x* + 3 or *x* + 15 '*x* = ' subtract B1
Total			**8**	
11a		130	1	B1
bi ii		40 < sum of triangle	1 1	B1 B1 Not 180 – (90 + 50)
Total			**3**	

12a	$^{2}/_{5}$x4800	1920	2	
b	0.85 x "1920" oe	1632	2	Allow 0.85 x 4800 oe
Total			**4**	

13i		$x + 2x + 1 + 3x - 5 = 17$	1	B1 oe eg $6x - 4 = 17$ ISW not '= p'
ii	$6x = 21$ or $6x - 21 = 0$ etc	$x = 3.5$ oe eg $^{21}/_{6}$	2	M1 ft (i) if $6x = c$ A1
Total			**3**	
14	9 seen 7/9 × 27 or 7×27/9 oe	21	3	B1 M1 dep B1 A1 21 seen, & ans = 3 B1M1A0
Total			**3**	
15	$5x - 20 = 35$ $5x = 55$	11	3	M1 M1dep or M2 for $x - 4 = 7$ A1
Total			**3**	
16a	$\frac{7 \times 50}{2}$ or 7, 50, 2		2	B1 for 7 and 2 B1 for 50
b	175	200 or 100	2	M1 (6or7) × (48or50) correctly eval'd 2 or 3 eg 168 A1f If no wking: ft (a)
c		Num incr or 6.8 & 47.6 incr denom decr or 2.09 decr (b) rnded up (not rnd to 1 sf) or '175' rnded to 200	2	B2 any two of these B1 any one of these Ignore other
Total			**6**	
17a	(2 + 3)/2 × 6 or 2 × 6 + $^{1}/_{2}$ × 6 × 1 oe	15	2	M1 A1
b	$^{15}/_{20}$ × 1000 | 1000 / 20 × 15 | 1000 × 15 / 20	750	3	M1 or 0.75 M1 ft '15' for M1M1 only A1
Total			**5**	

18	$x + 3 = 7x$ | $7y = 7x + 21$ $(6x = 3$ oe) | $(6y = 21)$	$x = {}^1/_2$, $y = 3{}^1/_2$	3	M1 $y = 7(y-3)$ $y = 7y-21$ $0 = 6x - 3$ A1A1
Total			**3**	
19a	tan used tan $x = 5.1/4.2$ or tan$x = 1.2\ldots$ oe	$x = 50.5\ldots$	3	M1 (sin or cos) & ($\sqrt{(4.2^2+5.1^2)}$ or 6.6) used M1 sin$x = 5.1/\sqrt{(4.2^2+5.1^2)}$ or cos$x = 4.2/\sqrt{(4.2^2+5.1^2)}$ A1
b	sin 29 = AB/5 or c/sin29 = 5/sin90 AB = 5sin 29	AB = 2.42... cm	3	M1 BC = 5cos29 M1 $AB = \sqrt{(5^2+(5\cos 29)^2)}$ or 5cos29×tan29 A1
Total			**6**	
20a	$1 - (0.1 + 0.2 + 0.1)$ or $1 - 0.4$ oe	0.6	2	M1 or 0.6 in table A1 allow in table if not contrad on line
b	$0.2 + 0.1$ or $1 - (\text{'}0.6\text{'} + 0.1)$	0.3	2	M1 or 0.3 seen A1
c		(Poss) overlap or mut excl or doesn't wk for B or Y } No or poss or poss yes }	2	Can't tell & (No or poss) B1 B2 Correct reason only: B1 Incorrect reason: B0 Unqualified Yes: B0
Total			**6**	
21	$4^2 + 6^2$ (= 52) $\sqrt{(4^2 + 6^2)}$ or √"52" or $2\sqrt{13}$	$h = 7.21\ldots$	3	M1 M1dep A1
Total			**3**	

Total 100 marks