

Mark Scheme (Results)

November 2007

IGCSE

IGCSE Mathematics (4400_1F)

4400 IGCSE Mathematics
November 2007
Paper 1F

Q		Working	Answer	Mark	Notes
1.	(a)		24	1	B1
	(b)		27	1	B1
	(c)		23	1	B1
	(d)		25	1	B1
	(e)		27	1	B1
	(f)		23	1	B1
					Total 6 marks

2.	(a)		Reasonable attempt	2	B2	horiz diag 2.3 to 3.1: B2, 2.0 to 3.4: B1 ignore other lines
	(b)(i)		0	1	B1	or none or zero or nought or nothing
	(ii)		2	1	B1	
					Total 4 marks	

3.	(a)		$\frac{3}{8}$	1	B1	or $\frac{6}{16}$
	(b)		$\frac{3}{4}$ shaded	1	B1	any 6 sectors shaded
	(c)		75	1	B1	ignore "%" sign
					Total 3 marks	

4.	(a)		5	1	B1	
	(b)		24	1	B1	allow 23 - 24.5 inclusive
	(c)		Russia	1	B1	or "Russia . . .6%" allow misspelling
	(d)	4 x 3.7	Western Europe	2	M1 A1	allow 4 x (3.0 to 3.9)
	(e)		Bar of correct ht	1	B1	$12.5 \leq h < 15$
	(f)	4.6/100 x 30000	1380	2	M1 A1	accept 1 380 000 000
						Total 8 marks

5.		5 x 2 + 7 x 3	31	2	M1 A1	5 x 2 and 7 x 3 or 10 and 21
						Total 2 marks

6.	(i)		Diameter	1	B1	allow misspelling
	(ii)		Segment	1	B1	allow misspelling
						Total 2 marks

7.	(a)		4.7	1	B1	
	(b)	(5.7 + 6.3)/2	6	2	M1 A1	5.7 & 6.3 indic'd, eg rings or arrow or $6\frac{1}{2}$ or 3.5
	(c)(i)		$\frac{1}{6}$ or 0.166.. or 0.17	1	B1	or 16.6..% or 17% allow 0.16 or 16%
	(ii)		$\frac{2}{6}$ oe	2	B2	M1 denom A1 num or $\frac{1}{3}$ or 0.33 B2
						Total 6 marks

8.	(a)(i)		25	1	B1	
	(ii)	$65 = 2n + 5$ or $(65-5)/2$ oe	30	2	M1 A1	- 5 or $\div 2$ or 60 or 32.5 or 27.5
	(b)		4 -6	2	B1 B1f	ft their "4" - 10
						Total 5 marks

9.	(a)	$5 \times 16 + 7 \times 12$	164	2	M1 A1	ISW
	(b)		$16x + 12y$	2	B2	oe B1 either term.
						Total 4 marks

10.	(a)(i)		2.345207...	1	B1	
	(ii)		2.345	1	B1f	ft if rounding needed
	(b)(i)		79.507	1	B1	
	(ii)		80	1	B1f	ft if rounding needed
						Total 4 marks

11.	(a)(i)		0.8 or 0.80 or $\frac{4}{5}$	1	B1	ignore "m" or "metres"
	(ii)	$2.5 \times 1.2 \times 0.8$	2.4	2	M1 A1	250 x 120 x 80 Allow $2.5 \times 1.2 \times 80$ or 2 400 000 <u>cm</u> ³
	(b)	$2.1/(2.5 \times 1.2)$ or $2.1/"2.4" \times 0.8$	0.7	2	M1 A1	$210/(250 \times 120)$ or $21/"24" \times 80$ or 70 ie vol \div area of base or 70 <u>cm</u>
						Total 5 marks

12.	(a)	$350 - 200 = 150$ $45 + 150 \times 0.5$	0.8 or 0.80 or $\frac{4}{5}$ 120	3	B1 M1 A1	Allow $45 + 350 \times 0.5$
	(b)	$140 - 45$ (= 95) "95" / 0.5 (= 190) $200 +$ "190"	390	4	M1 M1 M1 A1	- 45 $\div 0.5$ + 200 or: $140 -$ "120" (= 20) "20" $\div 0.50$ (= 40) $350 +$ "40"
Total 7 marks						

13.	(a)	$3x = 15$	5	2	M1 A1	or $15 / 3$
	(b)	$5y + 20$ (= 35) $5y = 15$	3	3	M1 M1 A1	or $35 / 5$ or $35 - 20$ may be implied $y + 4 = 7$ or $7 - 4$ or $15 \div 5$ M2
Total 5 marks						

14.	(a)	$360 / 5$ (= 72) $(180 -$ "72") / 2	54	3	M1 M1 A1	dep. or: $3 \times 180 \div 5$ $\div 2$
	(b)	$360 / 5$ or $180 - 2 \times$ "54"	72	2	M1 A1f	or 72 seen
Total 5 marks						

15.		$1 \times 5 + 2 \times 8 + 3 \times 3 + 4 \times 4$ (= 46) / 20	2.3	3	M1 M1 A1	dep. Allow / his Σf or 2 if $\frac{46}{20}$ seen
Total 3 marks						

16.	(a)	$3x = 15$	Isosceles	1	B1	or "isosceles triangle" allow misspelling, eg "eyesosilees"
	(b)(i)		$2x + 2x + x = 12$	1	B1	oe ISW allow in (ii) if not contrad in (i) ignore units
	(ii)	$5x = 12$	$x = 2.4$	2	M1 A1	allow in (i) if not contrad in (ii) $4x = 12$ SC1 $x = 2.4$, no working: BOM1A1
						Total 4 marks

17.	(a)		4 : 3	2	B2	1 mark for 4 to 3 or 1.33 : 1 or 1: 0.75 or 8 : 6 or 16 : 12 or 20:15
	(b)	$\frac{160}{280} \times 100$ or $\frac{4}{7} \times 100$	57(.1...)	2	M1 A1	
						Total 4 marks

18.	(a)	$\pi \times 2^2$	12.6	2	M1 A1	12.6 or better
	(b)	$\pi \times 3^2 - (\text{"12.6" or } \pi \times 2^2)$	15.7 to 15.8	2	M1 A1	$\pi \times 3^2 - \dots$
	(c)	$2 \times \pi \times 3$	18.8	2	M1 A1	allow $2\pi \times 3 - 2\pi \times 2$ for M1 only 18.8 to 18.9 (incl)
						Total 6 marks

19.		sin 2.5/7.1 or 0.352.....	20.6.....	3	M1 A1 A1	not sin 90
						Total 3 marks

20.	(a)		1, 2, 3, 4, 6, 8	2	B2	no repetitions B1 with repeats or one digit omitted
	(b)		1, 2, 9	2	B2	B1 if one digit is omitted or 1, 2, 9, 10
						Total 4 marks

21.		0.4 + 0.2 1 - (0.4 + 0.2)	0.4	3	M1 M1 A1	1 - (0.3 + 0.4 + 0.2) or 0.1 in table dep "0.1" + 0.3
						Total 3 marks

22.	(a)		w^8	2	B2	w^{10} seen: B1
	(b)	17 - x = 3×7 17 = 21 + x or -x = 4	x = -4	3	M1 M1 A1	or 17 = 3×7 + x
	(c)	4y < 6 + 5	y < 2.75	2	M1 A1	allow "=" only if ans incl "y <" or $y < 1\frac{1}{4}$ or $y < 2\frac{3}{4}$ on line
						Total 7 marks