

Mark Scheme January 2009

Functional Skills

Mathematics (FM101 and FM201)

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FM101/01				
No		Answer	Mark	Notes
1	(a)	9.4	1	B1 cao
	(b)	22.8-22.0 =	1	B1 Accept -0.8 (%)
	(c)	Graph	2	M1 for process of setting up graph; upto to 2 errors in plotting with all joined, or all plotted correctly and not joined. Tolerance: $\pm 1/2$ sq. A1 All points plotted correctly & joined.
	(d)	Reason	2	B2 for a complete description (eg goes up and then goes down); B1 for describing one aspect (eg goes up or down). For B1 ignore any incorrectly quoted figures.
	(e)	$\frac{(10.8+11.1+11.4+11.0+10.0+9.4+8.8+8.5)}{8}$	10.125	2
2	(a)	Line of symmetry	1	B1 for exactly one correct line of symmetry.
	(b)	2 \times 50=100, 3 \times 50=150	2	M1 for the process of $\times 50$ (implied by 100 or 150 seen) A1 for both Length 150 and Width 100
	(c)	1 : 50, 3:150 oe	1	B1 3:150 or equivalent ft from (b).
3	(a)	2844 \times 2=	2	M1 for sight of 2844 A1 cao
	(b)	26 \times 270=	1	B1 cao
	(c)	800 \times 2=	2	M1 for process of $\times 2$ or 800+800 A1 cao
4	(a)	24 \times 30 \div 60=	2	M1 for 24 \times 30, 24 \times 0.5, or 720 seen A1 cao
	(b)	60-"12"=	1	B1 for 48 or ft 60 – (a) if (a) < 60

FM101/01				
No		Answer	Mark	Notes
5	(a) (b) (c) (d) (e) (f)	3 12 th January 5 th January 2 nd February Graph Conclusion	1 1 1 1 2 1	B1 cao B1 Accept "2 nd week in January" or 12 th B1 Accept "1 st week in January" or 5 th B1 Accept "1 st week in February" or 2 nd NB: for (b), (c), (d) accept 2 nd , 1 st , 5 th , if consistent. M1 for process of drawing graph by showing 3 columns, at least 2 correct heights. A1 Three correct columns, correct heights, correct shading (distinct & linked to key given); allow misplacing by 1 column horiz to right but no gaps between columns. B1 one conclusion eg (bookings are) falling; description of a trend
6	(a) (b)	£12000 £15305	1 1	B1 cao B1 cao
7	(100×2) + (32×15×2) = 200 + 960 = or 32×15=480, 480+100=580, 580×2=	£680 or £1160	3	M1 process of calculating either 100×2 or 32×15×2, implied by sight of 200 or 960 or 32×15=480 or +100 (implied by 580) M1 for full process of (100×2)+(32×15) or (100×2)+(32×15×2) or 200+480 or 200+960 A1 £680 or £1160
8	(a) (b) (c)	1+3+1+3 8×2 + 2 = 18 8×4=	8 18 32	2 2 2 M1 for process of adding guests to the diagram or attempts to find the perimeter A1 cao M1 for process of adding guests, perhaps shown on a partial diagram indicating more than 5 tables, or sight of 8×2 or attempts to find the perimeter for more than 5 tables A1 cao M1 for groups of 4 indicated, or ×8; need more than 5 tables. A1 cao

FM101/01					
No		Answer	Mark	Notes	
9		EFDACB, EFADCB, EDFACB, EAFDCB	Correct order	2	B2 for all correct (B1 for at least 4 letters placed consecutively)
10	(a)	264153	264153	2	B2 cao (B1 for at least 3 of the order correct)
	(b)	65000+60800+47500=	£173300 millions	2	B2 for full answer, (B1 if numerically correct but incorrect/omitted £ & millions)
11.	(a)		33-36	1	B1 33-36 inclusive
	(b)			1	B1 ft angle given to nearest material in table, if angle is between 20° & 40°. NB: 55° linked to Mild Steel scores B0
12.	(a)		260°C	1	B1 cao
	(b)		-65°C	1	B1 cao
13.	(a)		£2.99	1	B1 cao
	(b)	2×£2.99=	£5.98	2	M1 for £2.99 or sight of ×2 or digits 598 A1 cao
	(c)	(3×£2.39) + (2×£9.99) = £7.17+£19.98 = £27.15 £30 - £27.15 = £2.85	£2.85	3	M1 for process of finding 3×2.39 (=7.17) or 2×9.99 (=19.98) or 27.15 M1 (dep) for addition of parts and subtraction from £30, or sight of £30 – “£27.15” A1 cao SC: B2 for digits 285
14.	(a)	74.5 – 11.5	63 g	1	B1 cao
	(b)	24 × 14.3 =	343.2 mm or 34.32 cm	2	B2 for correct numerical answer with appropriate units (B1 for correct numerical answer OR appropriate units with approximate answer)

FM101/01					
No		Answer	Mark	Notes	
15.	(a)	(i)	50.01	1	B1 cao
		(ii)	49.99	1	B1 cao
	(b)	$\frac{1}{100}$	$\frac{1}{100}$	1	B1 cao

FM201/01				
No		Answer	Mark	Notes
1	(a) (b) (c)	22.8-22.0 = $\frac{(10.8+11.1+11.4+11.0+10.0+9.4+8.8+8.5)}{8}$	0.8 Reason 10.125	1 2 2 B1 Accept -0.8 (%) B2 for a complete description (eg goes up and then goes down); B1 for describing one aspect (eg goes up or down). For B1 ignore any incorrectly quoted figures. M1 (10.8+11.1+11.4...)+8=81÷8 A1 10.1(25) SC: B1 if incorrect column used eg. BBC1:24.8(375), ITV1:23.3(625), C4: 9.7(375), Cfive: 6.0(125), Oth: 25.9(375)
2	(a) (b)	£10,000 ÷ 2843 = 3.5174... Daytime: 50,000÷800×0.2 = 12.5 Local news: 50,000÷1860×0.8 = 21.5 Peak soap: 50,000÷6907×3.1 = 22.44 Drama: 50,000÷3719×1.8 = 24.2 If adverts are rounded the figures are: 12.4 , 20.8 , 21.7 , 23.4 Alternative (additional) method: could also include up to 2×Daytime shows with an additional 0.4 viewers, taking the figure to 23.8	3 Drama 24.2 or 23.4	2 3 M1 process of £10,000÷2843 (or 3.51...) or at least 3 additions of 2843 A1 cao M1 process of dividing into 50,000 to find the number of adverts (at least one) with no contradiction. M1 process of multiplying by viewing figures (at least one) with no contradiction. A1 for comparing all four figures and deducing 24.2 or 23.4 (or better)
3	(a) (b)	26×270= 1860 ÷ 3 × 2 =	£7020 £1240	1 3 B1 cao M1 for process of ÷3 M1 for process of × 2 A1 cao

FM201/01				
No		Answer	Mark	Notes
4	(a)	$3 \times 60 = 180$; $180 \div 30 =$	6	B1 cao
	(b)	$24 \times 30 \div 60 =$	12 min.	M1 for 24×30 or 720 seen. A1 cao
	(c)	$60 - "12" =$	48 min.	B1 48 or ft 60 – (b) if (b) < 60
	(d)	$\frac{30}{3600} = \frac{1}{120}$	$\frac{1}{120}$	M1 for 60×60 or 3600 seen or $\frac{30}{3600}$ oe A1 cao
5	(a)		125	M1 for the process of totalling the numbers A1 cao
	(b)		1/125	B2 for $1/125$ " (accept fractions, decimals, percentages only) (B1 for $1/125$ " using incorrect notation such as 1:125, 1 in 125, etc.)
	(c)	Bars of height 2, 8, 6	Graph	M1 for process of drawing graph by showing 3 columns, at least 2 correct heights. A1 Three correct columns, correct heights, correct shading (distinct & linked to key given); allow misplacing by 1 column horiz to right but no gaps between columns.
	(d)		Conclusion	B1 one conclusion eg (bookings are) falling description of a trend
6	(a)	EFDACB, EFADCB, EDFACB, EAFDCB	Correct order	B2 for all correct (B1 for at least 4 letters placed consecutively).
	(b)	(i) $35 \div 5 =$ (ii)	7 27-29	B1 cao B1 answer 27-29 inclusive.
	(c)	$15 \div 10 =$	Lancaster or 1.5	M1 evidence of a division (sq m \div guests) eg E 1.2 B 1.2 E 1.2 M 1.2857 V 1.25 L 1.5 A1 Lancaster or 1.5 NB: A1 is dependent on seeing calculations for at least 4 rooms.

FM201/01					
No		Answer	Mark	Notes	
7	(a)	$8 \times 2 + 2 = 18$	18	2	M1 for process of adding guests, perhaps shown on a partial diagram indicating more than 5 tables, or sight of 8×2 or attempts to find the perimeter for more than 5 tables A1 cao
	(b)	$8 \times 4 =$	32	2	M1 for groups of 4 indicated, or $\times 8$ A1 cao
8		$(100 \times 2) + (32 \times 15 \times 2) = 200 + 960 =$	£680 or £1160	3	M1 process of calculating either 100×2 or $32 \times 15 \times 2$, implied by sight of 200 or 960 or $32 \times 15 = 480$ or $+100$ (implied by 580) M1 for full process of $(100 \times 2) + (32 \times 15)$ or $(100 \times 2) + (32 \times 15 \times 2)$ or $200 + 480$ or $200 + 960$ A1 £680 or £1160
9	(a)	264153	264153	2	B2 cao (B1 for at least 3 of the order correct)
	(b)	$41100 \div 3 =$	£13700 millions	2	M1 for $\div 3$ or 13700 A1 cao Must include £ and millions.
10	(a)		Cuboid	2	B2 for correct cuboid drawn (B1 for at least 2 dimensions drawn correctly) Any orientation; allow ± 2 mm tolerance.
	(b)	$\pi \times 1.5 \times 1.5 \times 12 =$	84.7-85	2	M1 $\pi \times 1.5 \times 1.5 \times 12$ A1 answer 84.7-85 inclusive
	(c)	$12 \times 20 \div 100$ oe or $\div 5$	2.4 cm	2	M1 correct process of finding 20% A1 oe
11.	(a)	$\text{£}10 \div \text{£}2.99 = 3.344; 3 \times 100 = 300$	300	2	M1 for process of finding the number of packs: $\text{£}10 \div \text{£}2.99 = 3.344$ or sight of 3 A1 for 300
	(b)	$(3 \times \text{£}2.39) + (2 \times \text{£}9.99) = \text{£}7.17 + \text{£}19.98 = \text{£}27.15$ $\text{£}30 - \text{£}27.15 = \text{£}2.85$	£2.85	3	M1 for process of finding $3 \times 2.39 (=7.17)$ or $2 \times 9.99 (=19.98)$ M1 (dep) for addition of parts and subtraction from £30, or sight of $\text{£}30 - \text{£}27.15$ A1 cao SC: B2 for digits 285

FM201/01					
No		Answer	Mark	Notes	
12.	(a)	$24 \times 14.3 =$	343.2 mm or 34.32 cm	2	B2 for correct numerical answer with appropriate units (B1 for correct numerical answer OR appropriate units with approximate answer)
	(b)	Length $18 \times 14.3 =$ Width $2 \times 48.4 =$	Length 257.4 Width 96.8	2	M1 for 18×14.3 or 2×48.4 or 257.4 or 96.8 or both answers the wrong way around. A1 cao both correct B1 cao Allow 4.5Watts or 4.5W
	(c)		(W=) 4.5	1	

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