Mark Scheme (Results)

January 2010

Functional Skills Mathematics – FM201
Paper: FM201/01

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FM201 / 01				
No.	Process	Evidence	Mark	Notes
Q1	Calculate and round off appropriately.	Attempt to find out how many 65s go into 300	1 or	300 ÷ 65 or multiple addition of at least three 65s or 4.615…
		Correct answer of 4	2	Award 1 mark for an embedded answer without contradiction.
Q2	Design table	Table outline with one feature from: amounts of money (eg in intervals) or column labels (eg months) or number of sales (up to 20)	1 or	Ignore attempts to complete the table. Accept month abbreviations. If money intervals shown, then no overlap NB: columns could be rows; accept a graph instead of a table.
	Add table detail	Table outline with two features from: amounts of money (eg in intervals) or column labels (eg months) or number of sales (up to 20)	2 or	For full marks table(s) or graphs should indicate how sales are recorded; eg 15-20 figures in cells (money scale up to £6000) and monthly totals (money scale up to £120,000); could suggest multiple charts (eg one per month)
		Table(s) with all necessary labels and features demonstrating amounts of money (eg in intervals) and column labels (eg months) and number of sales (up to 20)	3	

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No.	**Process**	**Evidence**	**Mark**	**Notes**
Q3	Adds units to diagram	Adds one correctly drawn unit (dimensions correct).	1 or	Could be with incorrect units drawn; ignore other appliances or island units.
		Adds at least three drawn units with correct width to at least two walls.	2 or	Spacing not important No errors in diagram, but some spaces left; could go into corners.
		Adds more than 3 drawn units with correct width to the kitchen to at least two walls.	3 or	If some depth wrong -1 mark.
	M1	Diagram with units on all walls and only permissible gap either side of door.	4	Fully drawn diagram, not errors or omissions, all dimensions correct; could go into corners.
	Takes account of the additional criteria for this question.	Two of: oven unit, sink, drawer unit.	1 or	As evidenced on the diagram; need not be labelled if otherwise clear eg by cost on diagram; dimensions need not be correct.
	M2	Inclusion of: oven unit, sink, drawer unit, and at least one other unit.	2	Sink can be on any wall.
	Calculates total	Finds some prices for units and attempts to add. NB: subtraction from £550 OK	1 or	eg at least two unit prices shown and added
	M3	Finds the correct total for their chosen units, which must be less than £550; units must be clearly identifiable on diagram.	2	Correct total for their units

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Q4	Graph drawn	Attempts to draw a graph on which points can be plotted (minimum is labelled axes, linear scale)	1 or	An appropriate graph would suggest a bar chart or a line graph.
		Attempts to draw a graph on which five points are plotted.	2 or	
	M1	Draws a graph on which five points are plotted accurately, and joined with a curve or polygon.	3	Tolerance of ±2mm when plotting.
	Graph interpreted	Demonstrates evidence of reading from graph or table using linear midpoint.	1 or	Absence of a graph does not prohibit the award of this mark.
	M2	Demonstrates evidence of reading from graph or table using linear midpoint arriving at a stated estimate. Accept answer 8900-9150 but ft graph if not.	2 or	

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No.	**Process**	**Evidence**	**Mark**	**Notes**
Q5		Attempts to change NW or van sales to payment over 3 years (same time frame) OR evidence of ×3 or ×36	1 or	
	M1	Evidence of working out for all three, then a comparison of their figures	2	
		275×36 (=9900) or 11200×1.175 (=13160) oe or 2800+300×36 (=13600)	1 or	NW: 275×36=**9900** Business: 11200×0.175=1960 11200+1960=**13160** -6000 =**7160**
		At least two of: 275×36 (=9900) or 11200×1.175 (=13160) oe or 2800+300×36 (=13600)	2 or	
	M2	275×36 (=9900) and 11200×1.175 oe -6000 (=7160) or 2800+300×36-6000 (=7600)	3	Van sales: 2800+300×3=**13600** -6000=**7600**
	M3	Comparison and correct answer	1	Business vans for £7160

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Q6	Uses the diagram to plan the shortest route.	Uses some times of routes from the table.	1 or	Shows some consecutive times added together
		Uses some times of routes from the table in an almost complete route (all but one places visited)	2 or	Names of places should be shown with times showing an almost complete route but not the shortest
	M1	Uses times of routes from the table, with evidence of some addition, choosing the shortest route by time. and back by 5pm.	3	Evidence must be clear, with names of towns also shown (or reversed) Man, BPool, LPool, Stoke, Sheff, Leeds, Man
	Applies the criteria and details of the task to the solution.	Uses some durations of times or shows use of 10-15 min for each stop or 1 h break	1 or	Allow some rounding of times (eg to nearest ¼ h) as long as stop & break times are preserved
		At least 2 of: starts at 8am; uses some durations of times; shows use of 10-15 min for each stop; 1 h break	2 or	
	M2	Starts at 8am (clearly shown); uses some durations of times; shows use of 10-15 min for each stop; 1 h break	3	
	Presents a clear description of the delivery schedule M3	Shows a partial set of times and places, with some ordering.	1 or	Demonstrates details with clarity.
		Shows a complete set of times and places, clearly presented in the form of a schedule.	2	

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No.	**Process**	**Evidence**	**Mark**	**Notes**
Q7	Applies the criteria to the problem and uses own methods to investigate, working towards a solution. M1	Uses one from each category, or totals the calories from some foods.	1 or	Trial and improvement approaches OK as long as it is not random. eg Beef Chips Peas Broccoli (180+143+20+32=375)
		Uses one from each category showing totals which need not be correct.	2 or	
		working towards an answer in the range, showing correct total calories.	3 or	
		Four ingredients that meet the criteria, correct total calories shown.	4	
	Links ingredients to money and performs relevant calculations. M2	Gives the prices of most of the ingredients chosen	1 or	
		Gives the prices of the ingredients chosen and the total excluding the packaging	2 or	Total of their ingredients must be correct.
		Gives the prices of the ingredients chosen and the total including the packaging	3	
	Solution presented clearly. M3	Presents correct working, ingredients and total cost with clarity.	1	Ingredients listed with their individual prices, calories, and the total shown, with correct notation.

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No.	**Process**	**Evidence**	**Mark**	**Notes**
Q8	Makes comparisons, draws conclusions.	Makes simple comparison(s) which could result in a recommendation based on at least one aspect; eg writes down two figures that could be compared.	1 or	Simple comparison: eg deductions without calculation or diagram, using comparable figures from the tables, perhaps with only one meal.
		Makes a comparison that draws on a calculation/graph/diagram, and results in a recommendation or does totalling or a mean calculation.	2 or	Detailed comparison: eg several independent or linked statements using figures relating to more than one meal.
		Makes more complex comparisons, using more than one feature from a calculation/ graph/diagram and results in a recommendation with reasons.	3	Complex comparison: eg using the results of calculations (eg means or totals), comparing more than one set of calculations or graphs.
	M1			

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	Makes numerical comparisons using given data	Does a valid calculation using figures from either table **or** makes one comparison from salt, fat, sugar using recommended averages **or** convert to per 100g figures for one aspect in one table.	1 or	Aspects: salt, fat, sugar protein.
	M2	Makes two comparisons from salt, fat, sugar using recommended averages **or** convert to per 100g figures for more than one aspect.	2 or	
		Makes three comparisons from salt, fat, sugar per 100g	3	
	Selects and uses appropriate mathematical graphs or charts	Chooses a valid/appropriate graph(s) or diagram(s) for comparison of at least one meal across all 3 aspects, or one aspect across more than one meal.	1 or	For 2 marks the graph or diagram needs to be correctly presented. Aspects of fat, sugar, salt.
	M3	Compares all meals and all three aspects using single or multiple graphs or diagrams.	2	