

Mark Scheme (Results)

January 2010

Functional Skills

Functional Skills Mathematics - FM101

Paper: FM101/01

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No.	Process	Evidence	Mark	Notes
Q1	Read from scale, interpreting correctly, and with accuracy.	Answer(s) given on answer line(s)	1 or	Ans 552-552.4 mm or 21.75 inches oe. Allow ans of 552 – 552.4 inches and 21.75mm
			2	552-552.4 mm and 21.75, $21\frac{3}{4}$ inches oe
Q2	Conversion and decision through comparison.	A correct decision that arises from an incorrect conversion is not valid.	1or	Partial conversion e.g (mm/cm) or Decision with valid comparison
		A full conversion with decision Usually implies a comparison.	2 or	Partial conversion e.g (mm/cm) and Correct decision with valid comparison
			3	Correct decision with valid comparison and Full conversion mm/mm or cm/cm or m/m
Q3	M1	Appropriate type of graph	1 or	Line graph, bar chart, scatter diagram
		Appropriate graph with labels	2	Line graph, bar chart, scatter diagram with correctly labelled axes
	Correct presentation of figures, rounding appropriately M2	Consistent scaling for both axis is required	1 or	Consistent scaling or accurate drawing Allow one error or omission in drawing
			2	Consistent scaling and accurate drawing Allow one error or omission in drawing

No.	Process	Evidence	Mark	Notes
Q4	Calculates area of floor; doubles	3×4 or “using 2”	1 or	3×4 = (12) or 3×2 = (6) or 4×2 = (8) or 12,6,8
	M1	24	2	Correct area seen or implied
	Uses information relating to coverage	division by 7 or (counting up in 7s with an explicit purpose)	1 or	eg “area” ÷7 or 3.4
	M2	4 tins	2	If working contradicts a correct answer no credit. Watch out for perimeter! If 4 tins seen without working full credit is given.

Incorrect units include:

1. Incorrectly drawn units.
2. Incorrectly orientated units (units against the wall)
3. Units partially accessible (doors cannot fully open)
4. Inaccessible units. (units in corners) Note: Corner units are not included in the question.

Q5	Adds units to diagram M1	Adds one correctly drawn unit	1 or	Could be with other incorrect units. Could be unlabelled.
		Adds at least 3 units to at least two walls	2 or	3 Units to be correctly drawn and orientated. Ignore incorrect units.
		Adds at least 5 units to at least 3 walls.	3 or	All Units correctly drawn and orientated. No unit incorrectly drawn or orientated. No more than two units to be partially accessible or inaccessible.
		Adds at least 6 units to all four walls.	4	All Units must be correctly drawn and orientated. All units must be fully accessible.
	Calculates total M2	Finds some prices for their units and attempts to add	1 or	eg: at least two unit prices shown and added
		Find the correct total for their Choice of units	2	Must be correct money units

No.	Process	Evidence	Mark	Notes	
Q6(a)		One suggestion eg no of seats, capacity, dimensions, overlapping ranges for loads, etc.	1 or	Other factors eg size, floor area, volume, tail-lift. Candidates who reiterate the features of the question gain no credit. Responses must be purposeful and not trivial.	
		Two suggestions eg no of seats, capacity, dimensions, overlapping ranges for loads, etc.	2		
Q6(b)	Applies the criteria for the choice of vans, applying the figures to the vans chosen.	One of: calculates an hourly/daily rate/weekly; makes a comparison picks correct van types for at least three days;	1 or	Lists the choice of van type for each day, and could then associate some calculations of hourly or daily or weekly rates. Makes a comparison between figures day by day, or overall totals.	
		Two of: calculates an hourly/daily/weekly rate; makes a comparison. picks correct van types for at least three days;	2 or		
		Picks correct van types, Calculates hourly/daily/weekly rates for all days and makes a comparison.	3		
	M1	Undertakes the calculations to enable a comparison to be made.	Calculates hourly or daily rates for all days		1or
			Calculates hourly and daily rates correctly for comparison.		2 or
			Describes the cheapest option or a correct total is found		3
M2			Monday per hour. Tuesday to Friday per day (oe). Or £275.94		

No.	Process	Evidence	Mark	Notes
Q7	Applies the criteria from the question.	One of: correct duration between calls; correct breaks applied; calls in given ranges of time	1 or	Durations of 3,2,3,1 need to be seen to be applied. Regulation regarding break applied eg 15 min then 30 min All 3 calls scheduled to arrive between ranges of times given in the question.
		Two of: correct duration between calls; correct breaks applied; calls in given ranges of time	2 or	
		Applies correct duration between calls, correct breaks applied and calls in given ranges of time	3	
M1	Calculates durations and times	Starts (), first call within constraints	1 or	Full marks may be obtained for a full staging of the situation e.g Start 8am Call 1 11am [Break 45 min] Call 2 1.45pm Call 3 4.45pm Depot 5.45pm
		Starts at 8am, 2 nd call between 1pm and 2pm, with a break clearly shown.	2 or	
		All times shown clearly meeting all criteria.	3	
M2	Calculates durations and times	Starts (), first call within constraints	1 or	Full marks may be obtained for a full staging of the situation e.g Start 8am Call 1 11am [Break 45 min] Call 2 1.45pm Call 3 4.45pm Depot 5.45pm
		Starts at 8am, 2 nd call between 1pm and 2pm, with a break clearly shown.	2 or	
		All times shown clearly meeting all criteria.	3	

No.	Process	Evidence	Mark	Notes
Q8	Interpretation of the diagram given, drawing conclusions and presenting results.	Adds together some distances of routes or offers a complete route	1 or	Shows some consecutive distances added together Route must be complete.
		Adds together the distances in a complete route, interpreting diagram	2 or	Names of places need not be shown, but distances show a complete route
		Adds together the distances of a number of routes, interpreting diagram or adds together the distances of the correct shortest route.	3 or	Evidence must be clear, with names of towns also shown
		Shows 320 miles and the route. Without working 320 miles scores 1 mark.	4	Manchester, Leeds, Sheffield, Stoke, Liverpool, Blackpool Manchester [or the reverse]
Q9	Performs calculations	Uses 500g as 0.5 or ½ kg	1 or	Shows 7.80/2 or 3.90
		Attempts to sum amounts “3.90” the result of 7.80/2 only	2 or	Shows the sum “3.90”+£1+90p
		Shows correct answer with incorrect/incomplete notation or correct amounts added with same units	3 or	eg shows 5.80 or (eg) 3.90+1.00+0.9
		Shows correct answer with correct money notation	4	£5.80 or £5.80p or 580p

No.	Process	Evidence	Mark	Notes
Q10	Conversion M1	Attempted conversion of st to lb or ft to in	1	13 st = $13 \times 14 = 182$ 5ft 11in = $5 \times 12 + 11 = 71$
	Uses the formula	Substitution	1 or	Correct subs of their figures into the complete RHS of the formulae
	M2	Correct calculation	2	25(.381075) or 26
	Make a conclusion using the table M3	Use of their answer to deduce the corresponding statement from the table.	1	
Q11	Applies the criteria to the problem and uses own methods to investigate, working towards a solution.	Uses one from each category, or evidence of working towards an answer in the range.	1 or	Trial and improvement approaches OK. eg Beef Chips Peas Broccoli ($180+143+20+32=375$)
		Uses one from each category and working towards an answer in the range.	2 or	
		Four ingredients that meet the criteria.	3	

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