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Mark Scheme (Results)

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Functional Skills Mathematics
Level 1 (FSM01)

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Guidance for Marking Functional Mathematics Papers

General

- All candidates must receive the same treatment. You must mark the first candidate in exactly the same way as you mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- All the marks on the mark scheme are designed to be awarded. You should always award full marks if deserved, i.e. if the answer matches the mark scheme. You should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.

Applying the Mark Scheme

- The mark scheme has a column for **Process** and a column for **Evidence**. In most questions the majority of marks are awarded for the process the candidate uses to reach an answer. The evidence column shows the most likely examples you will see:
  if the candidate gives different evidence for the process, you should award the mark(s).
- **Finding 'the answer'**: in written papers, the demand (question) box should always be checked as candidates often write their 'final' answer or decision there. Some questions require the candidate to give a clear statement of the answer or make a decision, in addition to working. These are always clear in the mark scheme.
- If working is **crossed out and still legible**, then it should be marked, as long as it has not been replaced by alternative work.
- If there is a **choice of methods** shown, then marks should be awarded for the 'best' answer.
- A suspected **misread** may still gain process marks.
- It may be appropriate to **ignore subsequent work** (isw) when the candidate's additional work does not change the meaning of their answer. You are less likely to see instances of this in functional mathematics.
- You will often see correct working followed by an incorrect decision, showing that the candidate can calculate but does not understand the demand of the functional question. The mark scheme will make clear how to mark these questions.
- **Transcription** errors occur when the candidate presents a correct answer in working, and writes it incorrectly on the answer line; mark the better answer.

- **Follow through marks** must only be awarded when explicitly allowed in the mark scheme. Where the process uses the candidate's answer from a previous step, this is clearly shown. Speech marks are used to show that previously incorrect numerical work is being followed through, for example **'240'** means **their** 240.
- Marks can usually be awarded where **units** are not shown. Where units, including money, are required this will be stated explicitly. For example, 5(m) or (£)256.4 indicate that the units do not have to be stated for the mark to be awarded.
  - **Correct money notation** indicates that the answer, in money, must have correct notation to gain the mark. This means that money should be shown as £ or p, with the decimal point correct and 2 decimal places if appropriate.

    e.g. if the question working led to £12÷5,

    Mark as correct: £2.40 240p £2.40p

    Mark as incorrect: £2.4 2.40p £240p 2.4 2.40 240

  - Candidates may present their answers or working in many **equivalent** ways. This is denoted **o.e.** in the mark scheme. Repeated addition for multiplication and repeated subtraction for division are common alternative approaches. The mark scheme will specify the minimum required to award these marks.
  - A **range** of answers is often allowed :
    - [12.5,105] is the inclusive closed interval
    - (12.5,105) is the exclusive open interval
  - **Parts of questions:** because most FS questions are unstructured and open, you should be prepared to award marks for answers seen in later parts of a question, even if not explicit in the expected part.
  - Discuss any queries with your Team Leader.

- **Graphs**
  The mark schemes for most graph questions have this structure:

Process		Evidence
Appropriate graph or chart – (e.g. bar, stick, line graph,)	1	1 of
	or	linear scale(s), labels, plotting (2mm tolerance)
	2	2 of
	or	linear scale(s), labels, plotting (2mm tolerance)
	3	all of
		linear scale(s), labels, plotting (2mm tolerance)

The mark scheme will explain what is appropriate for the data being plotted.

A **linear scale** must be linear **in the range where data is plotted,** whether or not it is broken, whether or not 0 is shown, whether or not the scale is shown as broken. Thus a graph that is 'fit for purpose' in that the **data is displayed clearly and values can be read**, will gain credit.

The minimum requirements for **labels** will be given, but you should give credit if a title is given which makes the label obvious.

Plotting must be correct for the candidate's scale. Award the mark for plotting if you can read the values clearly, even if the scale itself is not linear.

The mark schemes for **Data Collection Sheets** refer to **input opportunities** and to **efficient input opportunities.** When a candidate gives an input opportunity, it is likely to be an empty cell in a table, it may be an instruction to 'circle your choice', or it may require writing in the data in words. These become efficient, for example, if there is a well-structured 2-way table, or the input is a tick or a tally rather than a written list.

Section A: Garden

Question	Process	Mark	Mark Grid	Evidence
Q1 (a)	Draws vegetable plot on plan	1 or	A	Two of: 1 or 2 rectangles 3 × 2; one at least 1m from fence; one at least 1m from hedge; one at least 6 m from house
	Considers some criteria	2 or	AB	2 rectangles **and** at least three of: both 3 × 2; both at least 1m from fence; both at least 1m from hedge; both at least 6 m from house
	Considers all criteria	3	ABC	All of: 2 rectangles 3 × 2; both at least 1m from fence; both at least 1m from hedge; both at least 6 m from house
Q1 (b)	Finds area	1	D	79(m^2) **or** ft from (b)
Q1 (c)	Starts to calculate cost	1 or	E	7 × 11.5 (=80.5) **or** 80.5 **or** £80.50p
	Finds total cost	2	EF	£80.50 correct money notation
Total marks for question		**6**		

Question	Process	Mark	Mark Grid	Evidence
Q2(a)	Lists vegetables	1	G	Any 2 of aubergine, carrot, parsnip, pepper (with no incorrect extras)
Q2(b)	Uses information from table	1 or	H	10 ÷ 3 **or (**3, 6,)9 **or** 3.3(33..) **or** diagram showing **or** 10÷4 (=2.5) **or** max of 3 seeds in a bag **or** 4 × 3 (= 12) **or** 3+3+3+1
	Correct conclusion	2	HJ	Clear statement - 4 growbags/ room for 12 /she is right
Q2(c)	Consistent units	1 or	K	2 × 100(=200)**or** 30 ÷ 100(=0.3) **or** evidence of seeds being planted 30 cm apart (may be a diagram)
	Calculates no. in row	2	KL	200 ÷ 30 (=6.666…) **or** 2 ÷ 0.3 (=6.666…) **or** 6 remainder 2 **or** evidence of at least 6 or 7 seeds planted 30 cm apart **or** 6 remainder 2
	Gives number in a row	1	M	6 or 7
Total marks for question		**6**		

Question	Process	Mark	Mark Grid	Evidence
Q3	Calculates number of bags needed	1 or	N	100 ÷ 30 (=3.33…) **or** 4 of 30 litre bags **or** 100 ÷ 60 (=1.66…) **or** 2 of 60 litre bags **or** 100 ÷ 25 **or** 4 of 25 litre bags **or** uses '2 for 1' offer **or** uses '4 for the price of 3' offer
	Works out cost of 1 option	2 or	NP	Correct calculation for 1 option one of '4'×2.45 (=9.8) **or** '2'÷2 × 9.28 (=9.28) **or** 3×3.19 (=9.57) **or** 4×3.19 (=12.76)
	Work out all 3 costs	3	NPQ	9.8(0) and 9.28 and 9.57
	Decision based on calculation	1	R	(£)9.28 from correct figures **or** ft from three comparable figures. At least mark P scored
	Total marks for question	**4**		

Section B: Quiz

Question	Process	Mark	Mark Grid	Evidence
Q4 (a)	Finds mean or total from reverse check	1 or	A	(240+300+280+180+320+270)(=1590) ÷6 (=265) **OR** 280×6 (=1680)
	Correct mean or totals	2	AB	£265 **OR** 1590 **and** 1680
	Decision	1	C	Decision ft from supporting working. At least mark A scored
Q4(b)	Appropriate graph - bar graph (accept pictograph or line graph)	1 or	D	One of: Linear scale, labels, plotting ± 1 square
		2 or	DE	Two of: Linear scale, labels, plotting ± 1 square
		3	DEF	All of: Linear scale, labels, plotting ± 1 square
	Total marks for question	**6**		

Question	Process	Mark	Mark Grid	Evidence
Q5 (a)	Interprets problem – one features	1 or	G	**One of**: Space for 5 or 6 names, input opportunities for main course or 3 main course options, input opportunities for dessert or 2 dessert options **OR** two-way table
	Two features	2 or	GH	**Two of**: Space for 5 or 6 names, input opportunities for main course or 3 main course options, input opportunities for dessert or 2 dessert options **OR** two-way table with main course and dessert
	All three features	3	GHJ	**All of**: Space for 6 names, input opportunities for main course or 3 main course options, separate input opportunities for dessert or 2 dessert options.
Q5 (b)	Uses information in question to find number of packs of rolls	1 or	K	90 ÷ 8 (=11.25) **or** 91 ÷ 8 (=11.375) **or** works with whole packs of rolls **or** 12 × 8 (=96) **or** counting up in 8s until at least 88
	Finds correct number of packs of rolls	2	KL	12
Q5 (c)	Interprets information from question and begins to find amount of money spent or money left over	1 or	M	900–600–6×5(=270)
	Correct calculation	2	MN	(£)270
	Total marks for question	**7**		

Question	Process	Mark	Mark Grid	Evidence
Q6	Begins to interpret information from question by totalling right or totalling wrong **OR** considering a score per round	1 or	P	8+7+5+5+4+9 (=38) **or** 2+3+5+5+6+1 (=22) **or** at least 4 of 8×5, 7×5, 5×5, 5×5, 4×5, 9×5 **or** at least 4 of 2×2, 3×2, 5×2, 5×2, 6×2, 1×2 **or** 38×5 (=190) **or** 22×2 (=44) **or** 36 or 29 or 15 or 8 or 43
	Interprets given information, finds total number of right and total number of wrong **or** begins to work out number of points gained **or** number of points to be deducted **or** process to add scores per round	2 or	PQ	8+7+5+5+4+9 (=38) **and** 2+3+5+5+6+1 (=22) **or** at least 4 of 8×5, 7×5, 5×5, 5×5, 4×5, 9×5 **and** at least 4 of 2×2, 3×2, 5×2, 5×2, 6×2, 1×2 **or** 38×5 (=190) **and** 22×2 (=44) **or** 190 – 44 **or** 36+29+15+15+8+43
	Finds correct score	3	PQR	146 (points)
	Total marks for question	**3**		

Section C: Holiday in Rome

Question	Process	Mark	Mark Grid	Evidence
Q7 (a)	Applies criteria	1 or	A	One of 14:15 from Heathrow and 15:00 from Rome **or** 84 **or** 177 (may be circled in table)
	Correct flights found	2	AB	Both of 14:15 from Heathrow and 15:00 from Rome **or** 84 **and** 177 (may be circled in table)
Q7 (b)	Uses 3 nights or flight costs **or** budget	1 or	C	'84' + '177' (= 261) **or** 3 × 75 (=225) or 500 – flight cost / budget (=239)
	Right total **or** right remaining amount	2	CD	'486' **or** '14' ft from (a) **or** '239' and 225
	Decision ft from valid working	1	E	Decision ft from valid working (a) using candidate's chosen flights and 3 nights at hotel
	Total marks for question	**5**		

Question	Process	Mark	Mark Grid	Evidence
Q8	Selects three tours	1 or	F	Selects 3 tours **or** gives correct start and finish times for one tour
	Presents schedule appropriately	2 or	FG	Presents information showing all 3 tours with correct start times **or** gives correct start and finish time for 2 tours
	Start and finish times correct	3	FGH	Presents information showing all 3 tours with correct start and correct finish times
	Selects tours	1 or	J	Selects Vatican and at least one of Ancient Rome **or** Colosseum **or** Catacombs
	Gives schedule	2	JK	Selects Vatican and two of Ancient Rome **or** Colloseum **or** Catacombs in three different am/pm slots **and** all tours finish by 6pm **and** days correct
	Total marks for question	**5**		

Question	Process	Mark	Mark Grid	Evidence
Q9	Uses formula	1 or	L	(1 × 14 + 10) ÷ 2.2 **or** 10 × 2.2 (=22)
	Correct weight	2	LM	10.9 **or** 10.9090… **or** 11 **or** 24 and 22
	Makes decision	1	N	Decision ft from supporting working. Mark L must be scored.
	Total marks for question	**3**		

Question	Process	Mark	Mark Grid	Evidence
Q10	Finds duration of programme	1 or	P	Two of 1 hour oe **or** 50 min **or** 2 hours 20 mins oe **or** evidence of use of estimation
	Calculates total	2	PQ	Total of 5 hours oe seen **or** 30 minutes recording time left **or** total of estimates (=5 hours 20 mins) **or** 300 minutes
	Makes decision	1	R	Decision ft from supporting working. Mark P must be scored.
	Total marks for question	**3**		

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