Mark Scheme (Results)

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Pearson Edexcel 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- If working is **crossed out and still legible**, then it should be marked, as long as it has not been replaced by alternative work.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 question**s: 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** **or**	1 of linear scale(s), labels, plotting (2mm tolerance)
	2 **or**	2 of 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: Tennis Centre

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q1(a)	R3	Process to work with hours or courts or both	1 or	A	$3 \times 2(=6)$ **OR** $18.5 \times 3(=55.5)$ **OR** $18.5 \times 2(=37)$ **OR** $120 \div 3(=40)$ **OR** $120 \div 2$ $(=60)$ **OR** $120 \div 18.5(=6.4....)$
	A4	Complete process to find figures to compare	2 or	AB	$3 \times 2 \times 18.5(=111)$ **OR** '55.5' $\times 2(=111)$ **OR** '37$\times$ 3 $(=111)$ **OR** $120 \div (3 \times 2)(=20)$ **OR** $3 \times 2(=6)$ **and** $120 \div 18.5(=6.4.....)$
	I6	Valid decision from accurate figures	3	ABC	Yes **and** (£)111 **OR** Yes **and** (£)20 **OR** Yes **and** 6 **and** 6.4.…
Q1(b)	R2	Starts to work with constraints	1 or	D	Lists at least 5 different games **OR** constructs table
	I6	Attempts to complete list	2 or	DE	Lists 9 correct games - ignore repeats **OR** Lists 8 correct games and 1 repeat **OR** Lists 9 correct games with 1 or more reversals **OR** constructs correct 2-way table with 9 slots Condone A v D omission
	A5	Correct list	3	DEF	Lists exactly 9 correct games (no repeats) Condone A v D omission
Total marks for question			**6**		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q2(a)	R2	Chooses correct day	1	G	Wed(nesday) **and** no others
Q2(b)	R2	Interprets problem	1 or	H	$7 \times 4(=28)$ **OR** $7 \times 6(=42)$ **OR** $75 \div 7(=10.7..)$ **OR** $6 + 4(=10)$ **OR** $7 + 7(=14)$
	A4	Process to find cost or hours or weekly amount	2 or	HJ	'28'+ '42'(=70) **OR** '10' $\times 7(=70)$ **OR** $75 \div 7(=10.7..)$ **and** $6+4(=10)$ **OR** $(75 \div$ '14'$) \times 2(=10.7..)$ **and** $6+4(=10)$ **OR** $75 \div$ '10'$(=7.5)$
	I6	Valid decision from accurate figures	3	HJK	Yes **and** (£)70 **OR** Yes **and** (£)10.71 **and** (£)10 **OR** Yes **and** 7.5 weeks **or** 7.5 > 7 He has (£) 5 over
Total marks for question			**4**		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q3(a)	R1	Process to calculate total or work with differences	1 or	L	35+49+62+57+52 (=255) **OR** 50×5(=250) **OR** ±15±1±12±7±2
	A4	Process to calculate mean or reverse check	2 or	LM	'255'÷5(=51) **OR** 50×5(=250) **and** 35+49+62+57+52 (=255) **OR** sum of differences(=5)
	I6	Valid decision from correct process and	3	LMN	Yes and 51 **or** Yes and 255 and 250 **or** Yes and 'over' by 5 (No marks anywhere for median)
Q3(b)	R1	Correct process to find elapsed time	1	P	2200 – 0600(=16) **OR** 2100 – 0600(=15) **OR** 1700 – 0900(=8) **OR** full counting on method for one interval
	A4	Full process to combine their time intervals (at least 1 interval of 8 hours or more)	1 or	Q	'16' × 4 + '15' + '8'× 2(=95) **OR** '64' + '15' + '16'(=95)
	I6	Accurate figure	2	QR	95 (hours)
Total marks for question			**6**		

Section B: Waterbeds

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q4(a)	R2	Interprets table	1	A	Selects 665
	A4	Process to calculate cost or difference	1 or	B	'665'+85+17.50+43+2×8 (=826.50) **OR** 900 – '665'– 85– 17.50– 43– 2×8 (=73.50)
	I6	Correct conclusion with accurate figures	2	BC	Conclusion **and** (£)826.5(0) **OR** Conclusion **and** (£)73.5(0)
Q4(b)	R2	Begins to work with ratio	1 or	D	400÷100(=4) **OR** 30×2(=60) **OR** 250÷2(=125) **OR** 250÷30(=8.3…) **OR** 30×4(=120) **OR** 250÷4(=62.5)
	A4	Complete process to find figures to compare	2 or	DE	30×4×2(=240) **OR** 250÷2÷4(=31.25) **OR** 250÷30(=8.3…) **and** 4×2 (=8)
	I6	Correct decision from accurate figures	3	DEF	Yes and 240 **OR** Yes and 31.25 **OR** Yes and 10(ml) extra **OR** Yes and 8.3… **and** 8
Total marks for question			**6**		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q5(a)	R3	Starts to consider durations	1 or	G	Shows correct duration for any 2 jobs (finish time may be implied by next start time).
	A4	Considers all durations	2	GH	Shows correct duration for all jobs (finish time may be implied by next start time).
	I6	Uses correct time slots for all jobs	1	J	All jobs shown at correct time of day with start or finish times.
	A5	Allows some travelling time	1	K	Allows 30 minutes travel between at least 3 jobs
	I6	Fully correct sequential accurate time plan.	1	L	Fully correct sequential time plan, starting at 9, ending by 5, all times included, and time for travel and lunch included.
Q5(b)	R1	Process to calculate discount	1 or	M	0.15×24(=3.6) oe **OR** complete build up method **OR** 20.4(0) seen
	A4	Calculates correct discount	2	MN	£3.60 correct money notation Allow £20.40 correct money notation provided 3.6 seen
Total marks for question			**7**		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q6	R1	Draws graph or chart	1 or	P	1 of: labels, linear scale, plotting (2mm tolerance)
	A4	Improves graph or chart	2 or	PQ	2 of: labels, linear scale, plotting (2mm tolerance)
	I6	Correct graph	3	PQR	3 of: labels, linear scale, plotting (2mm tolerance) Minimum labelling: s(pring), s(ummer), a(utumn), w(inter), beds may be seen in title
Total marks for question			**3**		

Section C: Gemma's office

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q7(a)	R3	Works with tiles	1 or	A	36 seen **OR** evidence of counting all squares **OR** 153÷4.5(=34) **OR** 6 x 4.5(=27) **OR** 6 x 6(=36)
	A4	Full process to find figures to compare	2 or	AB	'36'×4.50(=162) **OR** '27' x 6(=162) OR '36' seen **AND** 153÷ 4.5(=34) OR 153÷'36'(=4.25)
	I6	Valid decision from accurate figures	3	ABC	No **and** (£)162 **OR** No **and** 36 **and** 34 OR No and 4.25 (cost each tile) No and (£)9 more (no credit for perimeter methods)
Q7(b)	R1	Begins to construct diagram	1 or	D	Rectangle against wall with correct length or correct width **OR** length: width is 2:1 (eg 6 by 3 not against wall)
	I6	Desk drawn correctly on plan	2	DE	Rectangle 6 squares by 3 squares against wall Allow in a corner
Total marks for question			**5**		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q8(a)	A4	Works with consistent units	1	F	300 (cm) **OR** 0.6 (m) **OR** 3000 (mm) **and** 600(mm)
	R2	Full process to calculate number of drops – arithmetic or geometric approach	1 or	G	'300' ÷ 60 (=5) oe **OR** '0.6 '+ '0.6' + '0.6' + '0.6' + '0.6' (=3) oe
	I6	Complete solution	2	GH	5
Q8(b)	R1	Substitutes in formula	1 or	J	32×4(=128)
	A4	Finds correct cost	2	JK	(£)168
	A5	Reverse check	1	L	Reverse check of any part of method eg 168-40=128 **OR** Alternate method **OR** Estimation eg 30×4
Total marks for question			**6**		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q9	R3	Process to find price at Cushen's Computers	1	M	(50÷100)×849 oe(=424.5) **OR** 400 × 2(=800)
	R2	Process to find price at Power House	1	N	1182.99÷3(=394.33) **OR** 400 × 3(=1200) Allow 0.33 × 1182.99 (=390.3867) for this mark only
	A4	Process to find price at Preston Computers	1	P	(12×28)+50(=386) **OR** (400-50)÷12(=(£)29.16) **OR** (400-50)÷28(=12.5 months)
	I6	Correct figures to compare or correct figures relating to budget	1	Q	(£)424.5 and (£)394.33 and (£)386 **OR** (£)800 and (£)1200 and (£)29.16 or 12.5(months)
	I6	Correct ft decision provided 2 of marks M or N or P awarded	1	R	Ft eg Power House and Preston Computers provided 2 of marks M or N or P awarded
Total marks for question			**5**		