

Mark Scheme (Results)

November 2016

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- If working is **crossed out and still legible**, then it should be marked, as long as it has not been replaced by alternative work.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 mark the working leading to the answer given in the answer box or working box. If there is no definitive answer then marks should be awarded for the 'lowest' scoring method shown.
- 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 indicates 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 $£12 \div 5$,

Mark as correct: £2.40 240p £2.40p 2.40£

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 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: Child minding business

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q1	R1 I6	Adds or subtracts time Conclusion with accurate figure	1 or 2	A AB	E.g. 8(am) + 9 (hrs) (=5pm) OR 6(pm) – 9 (hrs) (=9am) E.g. No and 5(pm) OR No and start at 9(am) OR No and she would work 10 (hours) NB ft. their answer if break considered
Total marks for question			2		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q2(a)	A4	Calculates a percentage	1 or	C	$30 \div 100 \times 200 (=60)$ oe
	I6	Correct answer	2	CD	(£)60
	A5	Valid check	1	E	E.g. alternative method OR reverse calculations
Q2 (b)	R1	Begins to work with scale or constraints	1 or	F	Rectangle with one of: <ul style="list-style-type: none"> • 1 side 6 square lengths • 1 side 8 square lengths • at least 4 square lengths away from the sand pit OR rectangle with sides in the ratio 3:4
	R2	Improves solution	2 or	FG	Rectangle with two of: <ul style="list-style-type: none"> • 1 side 6 square lengths • 1 side 8 square lengths • at least 4 square lengths away from the sand pit
	I6	Fully correct plan	3	FGH	Rectangle with all of: <ul style="list-style-type: none"> • 1 side 6 square lengths • 1 side 8 square lengths • at least 4 square lengths away from the sand pit
Total marks for question			6		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q3 (a)	A4	Starts to work with weeks and price	1 or	J	$3 \times 63.9 (=191.7)$ OR $63.9 \div 2 (=31.95)$ OR $4 \times 63.9 (=255.6)$ OR works backwards e.g. $220 - 63.9(=156.1)$
	R3	Develops calculation	2 or	JK	$3 \times 63.9 (= 191.7)$ AND $63.9 \div 2 (=31.95)$ OR $4 \times 63.9 (= 255.6)$ AND $63.9 \div 2 (=31.95)$ OR e.g. '156.1' - 63.9 - 63.9(=28.3)
	A4	Full process to find total cost	3 or	JKL	'191.7' + '31.95' (=223.65) OR '255.6' - '31.95' (=223.65) OR e.g. '28.3' - '31.95' (= -3.65)
	I6	Conclusion with accurate figure	4	JKLM	No AND (£)223.65 OR No AND (£)3.65 short
Q3 (b)	A4	Finds scale factor	1or	N	$1000 \div 200 (=5)$ OR $1000 \div 250 (=4)$
	R2	Process to find cost from 1 website from correct scale factor	2 or	NP	E.g. '5' \times 6.75 (=33.75) OR '4' \times 7.5 (=30) OR $6.75 \div 200(=0.03375)$ OR $7.50 \div 250(=0.03)$
	A4	Process to finds figures to compare	3 or	NPQ	E.g. '5' \times 6.75 (=33.75) AND '4' \times 7.5 (=30) OR $6.75 \div 200(=0.03375)$ AND $7.50 \div 250(=0.03)$
	I6	Decision with accurate figures	4	NPQ R	S(upa Print) and (£)33.75 and (£)30 OR S(upa Print) and (£)[0.03375, 0.34] and (£)0.03 OR S(upa Print) and [3.375, 3.4](p) and 3(p)
Total marks for question			8		

Section B: Exercise

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q4(a)	A4	Starts to complete graph	1 or	A	1 of: linear scale completed, labels, plotting (2 mm tolerance) Labels should be 'Weeks' (accept 'Time') and 'Weight'
	R2	Develops graph	2 or	AB	2 of: linear scale completed, labels, plotting (2 mm tolerance)
	I6	Fully correct graph	3	ABC	All of: linear scale completed, labels, plotting (2 mm tolerance) The word 'pounds' (or acceptable abbreviation) should be seen on the vertical axis 228, 225, 220, 220, 215, 216
Q4(b)	I6	Valid comment based on the data given	1	D	E.g. George has lost weight overall or George did not lose weight every week
Q4(c)	R3	Starts to substitute into formula	1 or	E	$209 \times 5 (= 1045)$ OR $90 \times 11 (= 990)$
	A4	Completes substitution	2 or	EF	'1045' $\div 11 (=95)$ OR '990' $\div 5 (=198)$
	I6	Correct conclusion with accurate figures	3	EFG	No AND 95 (kg) OR No AND 198 (pounds)
Total marks for question			7		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q5(a)	R2	Finds total distance or begins to work with mean	1 or	H	$25 + 32 + 39 + 53 + 59 + 35(=243)$ OR $38 \times 6(=228)$
	A4	Full process to find mean or figures to compare	2 or	HJ	$25 + 32 + 39 + 53 + 59 + 35(=243)$ and $38 \times 6(=228)$ OR '243' $\div 6(=40.5)$
	I6	Correct conclusion with accurate figures	3	HJK	Yes AND 40.5(km) OR Yes AND 243 (km) and 228 (km) OR Yes AND 15 (km) more
	A5	Valid check	1	L	E.g. alternative method OR reverse calculations
Q5 (b)	I6	Finds a route	1 or	M	e.g. HRPCMH
	R2	Process to find a total distance for any route, starting and finishing at home	2 or	MN	e.g. $2 + 2\frac{1}{2} + 3\frac{1}{2} + 3 + 4 (=15)$
	I6	Finds total distance for the shortest route	3	MNP	15 (miles)
	R2	Finds time	1 or	Q	'15' $\div 6 (=2.5)$
	A4	Correct answer ft from their distance provided M and N are awarded	2	QR	12 (noon) OR E.g. 12:10 (from 16 miles)
Total marks for question			9		

Section C: Restaurant work

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q6	R2	Starts to work with cleaner in ml or capfuls	1 or	A	$30 \times 4 (=120)$ OR $30 \div 20 (= 1.5)$ OR $5 \times 20 (= 100)$
	A4	Full process to find figures to compare	2 or	AB	'120' $\div 20 (=6)$ OR '1.5' $\times 4 (= 6)$ OR $30 \times 4(=120)$ and $5 \times 20(=100)$
	I6	Correct conclusion with accurate figures	3	ABC	No and 6 (capfuls) OR No and 120 (ml) and 100 (ml)
Total marks for question			3		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q7(a)	R1	Starts to work with hours or pay for each day	1 or	D	$4 + 5 + 4.5 + 4 + 4.5 (=22)$ OR $4 \times 7.85 (=31.4)$ or $4.5 \times 7.85 (=35.325)$ or $5 \times 7.85 (=39.25)$
	A4	Full process to find total pay	2 or	DE	'22' $\times 7.85 (=172.7)$ OR $2 \times '31.4' + 2 \times '35.325' + '39.25'$ (=172.7) Ft. from incorrect person
	I6	Correct answer with correct money notation	3	DEF	£[172.69,172.71] (correct money notation)
	A5	Valid check	1	G	E.g. alternative method or reverse calculations or estimation
Q7(b)	A4	Works with percentage	1	H	$240 \div 100 \times 25 (=60)$ oe
	R3	Full process to find figures to compare	1 or	J	$1200 \div '60' (=20)$ OR $26 \times '60' (=1560)$
	I6	Correct conclusion and accurate figure(s)	2	JK	No and 20 (weeks) OR No and (£)1560 (pay back sooner)
Total marks for question			7		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q8	R3	Process to find area of dining room	1	L	$11 \times 8 (=88)$ OR Counts squares
	R3	Works with perimeter	1	M	$8 + 11 + 8 + 11 - 1 - 1 (=36)$ Allow one error or omission OR $11 + 11 + 8 + 8 (=38)$
	R2	Process to find number of packs needed	1	N	'36' \div 9(=4) Allow use of 38
	I6	Works with their area or perimeter to find cost of carpet or skirting board	1 or	P	'88' \times 5.75(=506) OR '4' \times 17.95(=71.8)
	A4	Process to find their total cost or cost of both items	2 or	PQ	'506' + '71.8'(=577.8) OR '88' \times 5.75(=506) AND '4' \times 17.95(=71.8)
	I6	Correct answer	3	PQR	(£)577.8(0) OR Carpet (£)506 AND Skirting boards (£)71.8(0)
Total marks for question			6		

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