

Mark Scheme (Results)

November 2015

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- If working is **crossed out and still legible**, then it should be marked, as long as it has not been replaced by alternative work.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 (2 mm tolerance)
	2 or	2 of: linear scale(s), labels, plotting (2 mm tolerance)
	3	all of: linear scale(s), labels, plotting (2 mm 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: Looking after pets

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q1(a)	R2	Begins calculation	1 or	A	$5 \times 14 (=70)$ OR $5 \div 12 (=0.416\dots)$ OR $12 \div 5 (=2.4)$ OR 1 box lasts 2 days 5 boxes last 12 days Uses a build up method including addition (at least 3 values)
	A4	Completes calculation	2 or	AB	$'70' \div 12 (=5.8\dots)$ OR $5 \times 14 (=70)$ and $6 \times 12 (=72)$ OR $'0.416\dots' \times 14 (=5.8\dots)$ OR $14 \div '2.4' (=5.8\dots)$ OR 5 boxes last 12 days and 1 box lasts 2 days OR Complete build up method
	I6	Accurate answer	3	ABC	$5.8\dots$ OR 70 and 72 OR 6 boxes from complete correct method Complete correct build up
	I6	Rounds correctly to whole number	1	D	6 (boxes) ft. their answer provided Mark B is awarded.

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q1(b)	R3	Work with consistent units	1	E	5000(g) OR 0.35(kg) May be seen in subsequent calculations
	A4	Process to find amount of dog food per day or dog food needed or number of days available	1 or	F	$5 \div 14(=0.357\dots)$ oe OR '0.35' $\times 14(=4.9)$ oe OR '5000' $\div 350(=14.2\dots)$
	I6	Correct answer with correct working	2	FG	Yes AND 357(g) OR Yes AND 4.9(kg) OR Yes AND 4900(g) OR Yes AND 0.357(kg) and 0.35(0 kg) OR Yes AND 100 (g) OR Yes AND 14 justified
Q1(c)	R1	Indicates diagram with 180°	1	H	Indicates C
Total marks for question			8		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q2(a)	R2	Begins to work with time	1	J	E.g. 3:30 – 40 minutes (=2:50) OR Adds 40 minutes to any train arrival time in Huddersfield Allow 11:50 train arrives 38min early
	A4	Converts between 24 and 12 hour clock and reads train timetable	1	K	Identifies 13:12 or 14:12 OR 14:50 or 1:52pm or 2:52pm or 3:52pm
	I6	Chooses correct train	1	L	States 10:50 or 11:50
Q2(b)	A4	Process to work with 1/3	1 or	M	103.8 ÷ 3(=34.6) OR Allow 103.8 × 0.33...(=34.25..) or OR Allow methods using 2/3 for this mark only
	I6	Correct answer in correct money notation	2	MN	£34.60 (correct money notation)
	A5	Valid check	1	P	E.g. reverse calculation or estimation or alternative method

Q2(c)	R3	Begins process to work with cost	1 or	Q	$2.55 + 0.75 + 1.20 (= 4.50)$ $2.55 + 0.75 + 1.20 - 3.99 (= 0.51)$ OR $3.99 + 0.6 - 2.55 - 0.75 - 1.2 (= 0.09)$ OR $3.99 - 2.55 - 0.75 - 1.2 (= -0.51)$ OR $2.55 + 0.75 + 1.20 - 0.6 (= 3.9)$
	I6	Correct decision with correct working	2	QR	No and (she saves) 51p OR No and 9p difference (she saves 9p less) OR No and £3.90 (meal deal would cost) NB If units given, units must be correct.
Total marks for question			8		

Section B: Charity Work

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q3	R1	Starts to substitute or reverse substitute into formula	1 or	A	$15 \times 2 (=30)$ OR $10 \times 5 (=50)$ OR $15 \div 5 (=3)$ OR $10 \div 2 (=5)$
	A4	Completes substitution	2 or	AB	'30' $\div 5 (=6)$ OR '50' $\div 2 (=25)$ OR '3' $\times 2 (=6)$ OR '5' $\times 5 (=25)$
	I6	Conclusion with correct answer	3	ABC	No AND 6(cups) OR No AND 25 people
	A5	Valid check	1	D	Reverse process or alternative calculation
Total marks for question			4		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q4	R1	Process to add figures or to find total required or use differences	1 or	E	12 + 6 + 8 + 10 + 11(=47) OR 10 × 5(=50) OR 2 - 4 - 2 (+ 0) + 1(= -3)
	A4	Full process for figures to compare	2 or	EF	'47' ÷ 5(=9.4) OR 12 + 6 + 8 + 10 + 11(=47) and 10 × 5(=50) OR Under by 3 oe
	I6	Valid decision with accurate figures	3	EFG	Yes AND 9.4 (people) OR Yes AND 47 and 50 OR Yes AND sum of differences = -3
Total marks for question			3		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q5(a)	R1	Begins to draw graph or chart	1 or	H	One of: Linear scale, accurate plotting (2mm tolerance), suitable labels both axes
	I6	Improves graph or chart	2 or	HJ	Two of: Linear scale, accurate plotting (2mm tolerance), suitable labels both axes
	A4	Fully correct graph or chart	3	HJK	All of: Linear scale, accurate plotting (2mm tolerance), suitable labels both axes Minimum labelling: Years or 2010 etc.; Rough sleepers (may be seen in title)
Q5(b)	I6	Gives valid explanation	1	L	E.g. she is following pattern of increasing numbers OR The numbers go up every year
Total marks for question			4		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q6	R2	Works with Furniture4U – finds half price	1 or	M	$84 \div 2 (=42)$
	A4	Full process to find cost of 12 chairs at Furniture4U	2	MN	$84 \times 2 + '42' (=210)$
	R1	Works with Tablesandchairs.com for 12 chairs	1	P	$2 \times 94 (=188)$
	A4	Correct figures to compare	1	Q	210 and 188
	I6	Decision ft, their figures provided Marks M and P awarded	1	R	No ft. their figures provided Marks M and P awarded
Total marks for question			5		

Section C: Sports day

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q7(a)	I6	Works with scale	1 or	A	Rectangle with two of: Any length drawn alongside edge of events area; width equal 2 squares; length equal 8 squares OR Rectangle with sides in the ratio 1:4
	A4	Fully correct solution	2	AB	Rectangle with all of: Any side drawn alongside edge of events area; width equal 2 squares; length equal 8 squares
Q7(b)	R1	Works with perimeter	1 or	C	$10 + 6 + 10 + 6 (=32)$ OR $40 - (10 + 6 + 10 + 6) (=8)$ OR $40 \div 4 (=10)$
	I6	Correct conclusion with accurate figures	2	CD	Yes and 32 (m) OR Yes and 8(m spare) OR Yes and enough for 10(m) on each edge oe
	A5	Valid check	1	E	E.g. reverse calculation or alternative method Accept 8m left

Q7(c)	R3	Full process to find length in yards	1 or	F	$100 \div 50(=2)$ and $110 \div '2'(=55)$
	I6	Correct answer	2	FG	55 (yards)
Total marks for question			7		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q8	R1	Starts process with ratio	1 or	H	1 + 5(=6) OR 6 × 5(=30) OR 2:10, 3:15, 4:20 OR 24 - 6(=18)
	A4	Completes process with ratio	2 or	HJ	24 ÷ '6'(=4) OR '6'× 6(=36) OR '30'+ 6(=36) OR 6:'18'(=1:3) oe
	I6	Correct answer with correct figures	3	HJK	No and 4(litres of cordial) OR No and 36(litres of drink) OR No and 1:3 oe
Total marks for question			3		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q9	R2	Starts to tabulate data	1 or	L	Headings for 2 of: teams or points or races or position for each race
	I6	Improves design	2 or	LM	Input opportunities for points or position for each race AND headings for teams
	A4	Efficient design	3	LMN	Tabulates teams with input opportunities for points for each race and total points
	R3	Works with points for team or one race	1 or	P	E.g. Blue 15 + 5 + 7(=27)
	A5	Process to work with all data	2	PQ	All of: 15, 5, 0, 7 Blue 2, 12, 12, 0 Red 0, 0, 5, 10 Green column/row, Allow 2 errors or omissions
	I6	Shows total results correctly	1	R	27 Blue, 26 Red, 15 Green
Total marks for question			6		

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