

# Mark Scheme (Results)

May 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- If working is **crossed out and still legible**, then it should be marked, as long as it has not been replaced by alternative work.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 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 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,

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	
1 or	1 of:

– (e.g. bar, stick, line graph)		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: Party**

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q1a	R1	Starts to process costs	1 or	A	$2 \times 44.16 (=88.32)$ <b>OR</b> $2 \times 12.87 (=25.74)$ <b>OR</b> Adds at least 3 costs or subtracts at least 3 costs from 500 <b>OR</b> Correctly rounds up costs
	A4	Full process to calculate cost or difference	2 or	AB	$291.60 + 2 \times 44.16 + 81.43 + 2 \times 12.87 (=487.09)$ <b>OR</b> $500 - (291.60 + 2 \times 44.16 + 81.43 + 2 \times 12.87) (= 12.91)$ <b>OR</b> $292 + 2 \times 45 + 82 + 2 \times 13 (=490)$ <b>or</b> addition from other correct rounding
	I6	Correct conclusion with accurate figures	3	ABC	Conclusion <b>AND</b> (£)487.09 <b>OR</b> Conclusion <b>AND</b> (£)12.91 <b>OR</b> Conclusion <b>AND</b> (£)490 ft from correct rounding
Q1b	A4	Process to calculate percentage	1 or	D	$0.2 \times 45 (=9)$ oe <b>OR</b> $0.8 \times 45 (=36)$ oe
	I6	Finds discount	2	DE	(£)9(.00)
<b>Total marks for question</b>			<b>5</b>		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q2	A4	Works with consistent units	1	F	4500 (g) or 0.5 (kg) May be seen in subsequent working
	R3	Begins to calculate duration of cooking time	1	G	'4500' ÷ 500(=9) oe <b>OR</b> Repeated addition or subtraction of 500 oe (at least 6 times) <b>OR</b> Repeated addition or subtraction of 20 mins (at least 6 times) from 2 pm
	R1	Process to find total duration of cooking time using standing time.	1	H	('9' × 20) + 15(=195) (do not accept 35 minutes) <b>OR</b> Subtracts 15 mins standing time from 2 pm or from their start time (not embedded)
	A4	Time calculation or time conversion	1 or	J	E.g. '195' mins (= 3hrs 15mins) <b>OR</b> '180' mins (= 3hrs) <b>OR</b> 'total time' ÷ 60 (=3.25) <b>OR</b> 2(pm) – '180' – 15(=10.45)
	I6	Correct time to start cooking	2	JK	10.45(am) oe If this answer is seen, award full marks
<b>Total marks for question</b>			<b>5</b>		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q3a	R1	Works with multiples or ratio	1 or	L	$6 \times 3 (=18)$ eg: 1 litre apple produces 4 litres of fruit drink <b>OR</b> $3 + 1 = 4$ <b>OR</b> Uses a build-up method (at least 3 times)
	A4	Full process to calculate amount of drink needed or available	2	LM	$6 + '18' (=24)$ $'4' \times 6 (=24)$ <b>OR</b> $20 \div '4' (=5)$
	I6	Correct decision and correct answer	1	N	Yes <b>AND 24</b> <b>OR</b> Yes <b>AND 5</b>



Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q3b	R3	Process for bottles or process for glasses	1 or	P	$30 \times 160 (=4800)$ <b>OR</b> $6 \times 750 (=4500)$ <b>OR</b> $750 \div 160 (= 4.8675)$ <b>OR</b> $750 - 4 \times 160 (=110)$ <b>OR</b> Uses a full build-up method
	A4	Process for bottles and process for glasses.	2 or	PQ	$30 \times 160 (=4800)$ <b>and</b> $6 \times 750 (=4500)$ <b>OR</b> $'4800' \div '750' (=6.4)$ <b>OR</b> $'4500' \div 160 (=28.125)$ <b>OR</b> $6 \times '4.8675' (=28.125)$ <b>OR</b> $4500 \div 30 (= 150)$
	I6	Makes correct decision with accurate figures	3	PQR	No <b>and</b> 4800 (ml) <b>and</b> 4500 (ml) <b>OR</b> No <b>and</b> 6.4 (bottles) or 7 (bottles) <b>OR</b> No <b>and</b> 28(.125) (glasses) No and 150(ml)
<b>Total marks for question</b>			<b>6</b>		

**Section B: Staff training day**

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q4(a)	R3	Starts to consider durations	1 or	A	Shows correct duration for any 2 activities or breaks (finish time may be implied by next start time).
	A4	Considers all durations	2	AB	Shows correct duration for all activities and breaks (finish time may be implied by next start time). Condone one error or omission
	R2	Uses correct time slots for at least 3 activities.	1	C	At least 3 activities or breaks shown at correct time of day with start or finish times or correct duration
	I6	Fully correct sequential accurate time plan.	1	D	Fully correct sequential time plan, starting at 9, ending by 4 pm All start and finish times included.

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q4(b)	R1	Starts to construct a record sheet	1 or	E	At least 1 of: people or criteria with input opportunities.
	I6	Develops record sheet with input opportunities.	2 or	EF	At least 2 people and 2 criteria with input opportunities <b>OR</b> 4 groups and 2 criteria with input opportunities.
	I6	A complete record sheet with efficient input opportunities	3	EFG	4 people with all criteria <b>and</b> efficient input opportunities

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q4(c)	16	Writes a relevant statement	1	H	<p>Makes reference to a relevant feature of the profit figures e.g.: Profit has gone higher each season.</p> <p>Do <b>not</b> accept a statement that solely refers to sales or prices eg: My prices have gone higher each season.</p> <p>Do <b>not</b> accept erroneous statements eg: The colder the season the more the profit.</p> <p>Do <b>not</b> accept statements that refer to one season only. eg: The profit in summer is £12800</p>
<b>Total marks for question</b>			<b>8</b>		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q5	A4	Works with consistent units	1	J	Working with pounds 0.95 <b>or</b> '8.1' <b>OR</b> Working with pence 950 <b>or</b> 4520 <b>or</b> '810'
	R1	Process for car journey	1 or	K	$18 \times 0.45 (=8.1(0))$ <b>OR</b> $18 \times 45 (=810)$ Could be seen in subsequent working.
	A4	Totals expenses with consistent units	2 or	KL	'8.1' + 9.5 + 45.20 + '0.95' (=63.75) <b>OR</b> '810' + 950 + 4520 + 95 (=6375)
	I6	Correct total in correct money notation.	3	KLM	£63.75 correct money notation.
	A5	Shows a relevant check	1	N	e.g. $810 \div 45 (=18)$
<b>Total marks for question</b>			<b>5</b>		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q6	R1	Process to calculate number of slices or number of sandwiches from 1 loaf.	1 or	P	85 × 3(=255) slices needed <b>OR</b> 24 ÷ 3(=8) sandwiches per loaf <b>OR</b> 24 × 12(=288) Jeff has these slices
	A4	Process to calculate number of loaves needed	2 or	PQ	85 × 3(=255) <b>and</b> 24 × 12(=288) <b>OR</b> '255' ÷ 24(=10.625) loaves needed <b>OR</b> 85 ÷ '8'(=10.625) loaves needed <b>OR</b> '8' × 12(=96) sandwiches from 12 loaves <b>OR</b> 288 ÷ 3(=96)
	I6	Finds number of loaves needed with correct decision	3	PQR	Yes <b>and</b> 255 <b>and</b> 288 (slices) <b>OR</b> Yes <b>and</b> 10.625 or 11 (loaves) <b>OR</b> Yes <b>and</b> 96 (sandwiches)
<b>Total marks for question</b>			<b>3</b>		

**Section C: New home**

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
<b>Q7a</b>	R2	Starts to process information	1 or	A	$3 \times 25370 (=76110)$ <b>OR</b> $94250 - 22000 (=72250)$
	A4	Full process to find figures to compare	2 or	AB	'76110' + 22000(=98110) <b>OR</b> $94250 - '76110' (=18140)$ <b>OR</b> $3 \times 25370 (=76110)$ <b>and</b> $94250 - 22000 (=72250)$ <b>OR</b> '76110' - '72250'(=3860) <b>OR</b> '72250' ÷ 3(=24083.33...)
	I6	Conclusion with accurate figures	3	ABC	Yes <b>and</b> (£)98110 <b>OR</b> Yes <b>and</b> (£)18140 <b>OR</b> Yes <b>and</b> (£)76110 <b>and</b> (£)72250 <b>OR</b> Yes <b>and</b> (£)3860 <b>OR</b> Yes <b>and</b> (£)24083.33...

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q7b	R1	Works with mean	1 or	D	1380.50 + 1550.24 + 1499.23 (= 4429.97) <b>OR</b> 3 × 1500 (= 4500) <b>OR</b> Compares differences ( = -119.5, 50.24, -0.67)
	A4	Completes calculation to enable comparison	2 or	DE	'4429.97' ÷ 3 (= 1476.65...) <b>OR</b> 1380.50 + 1550.24 + 1499.23 (= 4429.97) <b>and</b> 3 × 1500 (= 4500) <b>OR</b> Totals differences -119.5 + 50.24 - 0.67 (= -70.03)
	I6	Decision with figures	3	DEF	Decision <b>and</b> [1476, 1477] <b>OR</b> Decision <b>and</b> [4429, 4430] <b>and</b> 4500 <b>OR</b> Decision <b>and</b> -70.03
<b>Total marks for question</b>			<b>6</b>		



Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q8	R2	Shows a partial route indicating at least three directly connected places in an appropriate direction of travel.	1 or	G	E.g.: Flat to Park to Estate agents <b>OR</b> Garage to Flat to house <b>OR</b> E.g.: 8 + 11 <b>OR</b> 7 + 13 Permit 2 or more arrows to indicate a partial route.
	A4	Finds a complete route. Order of operations not taken into account.	2	GH	8+11+11+16(=46) <b>OR</b> 8+11+11+8+6(=44) <b>OR</b> 8+11+13+12(=44) <b>OR</b> 7+13+11+16(=47) <b>OR</b> 8+11+13+7+6(=45) <b>OR</b> 7+13+11+8+6(=45) <b>OR</b> 7+13+13+12(=45) <b>OR</b> 7+13+13+7+6(=46)
	I6	Communicates correct route	1	J	Flat, Park, ES, Park, Flat, House <b>OR</b> Flat, Park, ES, Garage, House Accept abbreviations
	A5	Justifies a complete route that satisfies criteria or shows an explicit check of their route	1	K	8 + 11 + 11 + 8 + 6 = 44 <b>OR</b> 8 + 11 + 13 + 12 = 44 <b>OR</b> 45 – (8 + 11 + 11 + 8 + 6) = 1 oe
<b>Total marks for question</b>			4		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q9(a)	A4	Begins to address criteria	1 or	L	Rectangle with 2 of length 6 squares <b>or</b> width 2 squares <b>or</b> at least 4 squares away from the shed. <b>OR</b> Rectangle 3 by 1 and at least 2 squares from shed
	I6	Correct solution	2	LM	Rectangle with all of length 6 squares <b>and</b> width 2 squares <b>and</b> at least 4 squares away from the shed.

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q9(b)	R2	Works in consistent units	1	N	9m <b>or</b> 8000mm <b>or</b> 3000mm <b>OR</b> 900cm <b>and</b> 800cm oe Do not credit 1000mm or 100cm alone. May be seen in subsequent working
	R1	Process to find perimeter	1 or	P	3 + 1 + 3 + 1( =8) <b>OR</b> 2(6 × 0.5) + 2(2 × 0.5) = 8(m) <b>OR</b> 9 – (3 + 1 + 3 + 1)(=1) oe A process that involves two or three sides of fencing against one or two edges of the garden
	A4	Correct answer	2	PQ	8 <b>or</b> 1 oe
	I6	Correct decision with correct units ft. their solution	1	R	Yes <b>AND</b> 8 m(etres) <b>and</b> 9 m(etres) oe <b>OR</b> Yes <b>AND</b> 8000 mm with correct units. ft their solution provided units are given correctly, no credit for area methods.
<b>Total marks for question</b>			<b>6</b>		

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