

# Mark Scheme (Results)

March 2017

Functional Skills Mathematics Level 1

FSM01

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## Guidance for Marking Functional Skills Maths 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- If working is **crossed out and still legible**, then it should be marked, as long as it has not been replaced by alternative work.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 his or her answer.
- You will often see correct working followed by an incorrect decision, showing that the candidate can calculate but does not understand the functional demand of the 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 in a written paper); mark the better answer.
- **Incorrect method** if it is clear from the working that the "correct" answer has been obtained from incorrect working, award 0 marks. Send the response to review for your Team Leader to check.
- **Follow through marks (ft)** 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  
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 **oe** 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
- **Parts of questions:** because most FS questions are unstructured and open, you should be prepared to award marks for answers seen in other parts of a question, even if not explicit in the expected part. E.g. checks in on earlier answer box.
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- **Graphs**

The mark schemes for most graph questions have this structure:

Process	Mark	Evidence
Appropriate graph or chart – (e.g. bar, stick, line graph)	1 or	1 of: linear scale(s), labels, accurate plotting (2 mm tolerance)
	2 or	2 of: linear scale(s), labels, accurate plotting (2 mm tolerance)
	3	all of: linear scale(s), labels, accurate 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**, and use consistent intervals. The scale may not start at 0 and not all intervals must be labelled. Thus a graph that is 'fit for purpose' is one where 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. Candidate's scale must be in numerical order. Award the mark for plotting if you can read the values, even if the scale is not linear.

The mark schemes for **Data Collection and/ or summary 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.

Discuss any queries with your Team Leader.

**Section A: Market stall**

<b>Question</b>	<b>Skills Standard</b>	<b>Process</b>	<b>Mark</b>	<b>Mark Grid</b>	<b>Evidence</b>
<b>Q1 (a)</b>	R2	Starts to access display	1 or	A	At least 2 criteria correct
	I6	Fully correct display	2	AB	Fully correct display, all 7 correct fruits
<b>Q1 (b)</b>	A4	Process to calculate percentage	1 or	C	$0.15 \times 4.6(0)$ (=0.69) oe <b>OR</b> full build up method <b>OR</b> accept £3.91 for this mark only
	I6	Correct answer with correct money notation	2	CD	£0.69 <b>or</b> 69p Correct money notation
<b>Total marks for question</b>			<b>4</b>		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q2(a)	R1	Uses consistent units	1	E	Eg 0.5(kg) <b>or</b> 2000(g) <b>or</b> scale factor 4 used <b>or</b> 1kg=1000g used in a calculation ie uses consistent units
	A4	Finds scale factor for weight or price or unit price for weight or unit weight per £ or p	1 or	F	Eg $2000 \div 500 (=4)$ <b>oe OR</b> $\frac{1}{4}$ <b>or 4 OR</b> $48 \times 2 (=96)$ <b>or</b> $165 \div 2 (=82.5)$ <b>OR</b> $165 \div 48 (=3.43..)$ <b>OR</b> $48 \div 500 (=0.096)$ <b>oe or</b> $48 \div 5 (=9.6)$ <b>or</b> $165 \div 20 (=8.25)$ <b>OR</b> $165 \div 2000 (=0.0825)$ <b>oe or</b> $500 \div 48 (10.41..)$ <b>oe OR</b> $2000 \div 165 (=12.12..)$ <b>oe</b>
	A4	Process to find figures to compare	2 or	FG	Eg $\frac{1}{4}$ <b>or 4 AND</b> $165 \div 48 (=3.43)$ <b>OR</b> $4 \times 48 (=192)$ <b>OR</b> $165 \div 4 (=41.25)$ <b>OR</b> '3.43' $\times 500 (=1715)$ <b>AND 2000 OR</b> ' $48 \times 2$ ' $(=96)$ <b>AND</b> ' $165 \div 2$ ' $(=82.5)$ <b>OR</b> ' $48 \div 500$ ' $(=0.096)$ <b>AND</b> ' $165 \div 2000$ ' $(=0.0825)$ <b>OR</b> ' $48 \div 5$ ' $(=9.6)$ <b>AND</b> ' $165 \div 20$ ' $(=8.25)$ <b>OR</b> ' $500 \div 48$ ' $(=10.41...)$ <b>AND</b> ' $2000 \div 165$ ' $(=12.12..)$
	I6	Correct decision from accurate figures	3	FGH	No <b>AND</b> (£)1.92 <b>OR</b> No <b>AND</b> 192(p) <b>OR</b> No <b>AND</b> 41.25 <b>OR</b> No <b>AND</b> 2 correct figures compared, e.g. 10(.41..) and 12(.12..) <b>OR</b> No <b>AND</b> 4 <b>AND</b> 3.43
	A5	Valid check	1	J	Valid check E.g. approximation, alternative method or reverse process

<b>Q2(b)</b>	R1	Process to find shelf length or total length of strip	1 or	K	$12 + 45 + 12 (=69)$ <b>or</b> $25 \times 3 (=75)$ <b>OR</b> $45 \div 3 (=15)$ <b>or</b> $12 \div 3 (=4)$ <b>or</b> $'(12 + 12)' \div 3 (=8)$ May be seen on diagram
	A4	Process to find figures to compare	2 or	KL	$12 + 45 + 12 (=69)$ <b>and</b> $25 \times 3 (=75)$ <b>OR</b> $'69' \div 3 (=23)$ <b>OR</b> $'15' + '4' + '4' (=23)$ <b>OR</b> $'15' + '8' (=23)$ <b>OR</b> $'75' - 45 - 12 - 12 (=6)$
	I6	Correct decision, accurate figures	3	KLM	Yes <b>and</b> 69 <b>and</b> 75 <b>OR</b> Yes <b>and</b> 23 <b>OR</b> Yes <b>and</b> 2 (strips) <b>OR</b> Yes <b>and</b> 6 (ft)
<b>Total marks for question</b>			<b>8</b>		



Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q3(a)	I6	Ticks correct box	1	N	Unlikely box ticked or indicated
Q3(b)	R1	Interprets problem	1 or	P	Input opportunities <b>and</b> 1 of: time <b>and</b> distance heading <b>OR</b> at least 2 of morning, afternoon, evening, <b>OR</b> at least 2 of under 5 or 5–15 or over 15
	R2	Improves solution	2 or	PQ	All of: Input opportunities <b>and</b> morning, afternoon, evening <b>and</b> under 5, 5–15, over 15 Allow questionnaire 2 marks only
	I6	Completes solution	3	PQR	All of: Efficient input opportunities for all of morning, afternoon, evening <b>and</b> under 5, 5–15, over 15
<b>Total marks for question</b>			<b>4</b>		

**Section B: Wildlife centre**

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
<b>Q4(a)</b>	R1	Starts to work with costs	1	A	Uses 12.6 and 6 in a calculation May be seen in subsequent working
	A4	Develops solutions	1 or	B	$12.6 \times 2 (=25.2)$ <b>or</b> $6 \times 2 (=12)$ <b>or</b> $12.6 + 6 (=18.6)$ <b>or</b> $32 - 12.6(=19.4)$ <b>or</b> $32 - 6(=26)$
	R3	Process to find total costs or cost per person	2 or	BC	'25.2' + '12' (=37.2) <b>OR</b> '18.6' $\times$ 2 (=37.2) <b>OR</b> $32 - 12.6 - 12.6 - 6 - 6(=-5.2)$ <b>OR</b> $32 - 12.6 - 12.6 - 6 (=0.8)$ <b>OR</b> $32 - 12.6 - 6 - 6(=7.4)$
	I6	Correct decision, accurate figures	3	BCD	Yes <b>AND</b> (£)37.2(0) <b>OR</b> Yes <b>AND</b> cheaper by (£)5.2(0) <b>OR</b> Yes <b>AND</b> (£)0.8(0) <b>or</b> 80p for 1 child <b>OR</b> Yes <b>AND</b> (£)7.4(0) for 1 adult

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
<b>Q4(b)</b>	R3	Starts to substitute in formula	1 or	E	$3 \times 8(=24)$ <b>or</b> $5 \times 4(=20)$
	A4	Completes substitution	2 or	EF	'24' $\div$ 5(=4.8) <b>OR</b> '20' $\div$ 8(=2.5)
	I6	Correct decision with accurate figures	3	EFG	Yes / No <b>and</b> 4.8(km) <b>OR</b> Yes / No <b>and</b> 2.5(miles)
	A5	Valid check	1	H	Reverse process, alternative method or estimation
<b>Total marks for question</b>			<b>8</b>		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q5	R3	Starts to plan day	1 or	J	2 of flamingo talk, swan feeding and lunch correct on plan with start and finish times
	A4	Considers all given activities	2	JK	All of flamingo talk, swan feeding and lunch correct on plan with start and finish times
	R2	Works with at least 2 other activities	1	L	At least 2 of pond dipping, den building, bug hunting and meet the reptiles on the plan, in 30 minute slots, start and finish times included
	A4	Considers travelling times	1	M	At least 10 minutes travelling time between 3 activities shown
	I6	Fully correct, accurate time plan	1	N	Fully correct, accurate, sequential time plan, showing start and finish times, and finishing within the time frame
<b>Total marks for question</b>			<b>5</b>		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q6(a)	A4	Starts to work with costs	1 or	P	$4 \times 1.2(=4.8)$ <b>or</b> $5 - 1.2 - 1.2 - 1.2 - 1.2(=0.2)$
	I6	Correct decision, accurate figures	2	PQ	Yes <b>AND</b> (£)0.2(0) <b>OR</b> Yes <b>AND</b> 20(p) Yes <b>AND</b> (£)4.8(0)
Q6(b)	I6	Selects correct day	1	R	Wednesday <b>or</b> Friday <b>OR</b> Wednesday <b>and</b> Friday Could be marked on diagram
<b>Total marks for question</b>			<b>3</b>		

**Section C: Dining room**

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
<b>Q7(a)</b>	R2	Process to find area of floor	1	A	$5 \times 3 (=15)$ <b>OR</b> splits diagram into 15 squares <b>OR</b> uses build up method with tiles
	A4	Process to find number of tiles needed or tiles available	1 or	B	$'15' \times 4 (=60)$ <b>OR</b> 60 tiles shown on diagram <b>OR</b> $10 \times 7 (=70)$ Allow $16 \times 4 (=64)$ for this mark only
	A4	Process to find figures to compare	2 or	BC	$'15' \times 4 (=60)$ <b>and</b> $10 \times 7 (=70)$ <b>OR</b> $'60' \div 10 (=6)$ <b>OR</b> $'70' \div '15' (=4.6..)$ <b>OR</b> $'70' \div 4 (=17.5)$ <b>OR</b> $'60' \div 7 (=8.5...)$
	I6	Correct decision, accurate figures	3	BCD	Yes <b>and</b> 70 <b>and</b> 60 <b>OR</b> Yes <b>and</b> 6 <b>OR</b> Yes <b>and</b> 4.6.. <b>OR</b> Yes <b>and</b> 17.5 <b>OR</b> Yes <b>and</b> 10 (left over) <b>OR</b> Yes <b>and</b> 1 (pack left over) <b>OR</b> Yes <b>and</b> 8.5.. (tiles per pack needed) All figures must be supported by correct calculations
<b>Q7(b)</b>	R1	Calculates using ratio	1 or	E	$3 \times 2 (=6)$
	I6	Correct units and accurate figures	2	EF	6 l(itres) correct units needed
	A5	Valid check	1	G	Valid check e.g reverse process, alternative method or estimation
<b>Total marks for question</b>			<b>7</b>		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
Q8	R1	Begins to access problem	1	H	A rectangle drawn with a length of 4 squares, 3 squares or 1 square
	I6	Table drawn correctly	1	J	Rectangle drawn on plan 4 squares by 3 squares
	R2	Considers display unit dimensions	1	K	Rectangle drawn on plan 1 squares by 3 squares
	I6	Fully correct plan	1	L	For two non overlapping rectangles, 4 squares by 3 squares and 1 squares by 3 squares with a length of 3 squares against the wall for the display unit  Any labels given must be correct
<b>Total marks for question</b>			<b>4</b>		

Question	Skills Standard	Process	Mark	Mark Grid	Evidence
<b>Q9</b>	R2	Starts the process to find cost at House of Style	1 or	M	$32 \times 12 (=384)$ <b>or</b> $500 - 95 (=405)$
	A4	Complete process to find cost at House of Style	2	MN	'384' + 95 (=479) <b>OR</b> '405' ÷ 12 (=33.75) <b>OR</b> '405' ÷ 32 (=12.65..) <b>OR</b> '405' - '384' (=21)
	A4	Process to find cost at Dining Outlet	1	P	$1545 \div 3 (=515)$ <b>OR</b> $500 \times 3 (=1500)$ Allow $0.33 \times 1545 (=509.85)$ for this mark only
	A4	Process to find cost at Naveed's Dining Shop	1	Q	$199 + 280 + 20 (=499)$ <b>OR</b> $500 - 199 - 280 - 20 (= 1)$
	I6	Correct conclusion, accurate figures	1	R	House of Style <b>AND</b> Naveed's Dining Shop <b>AND</b> (£)479 <b>or</b> (£)33.75 <b>or</b> 12.65..(months) <b>AND</b> (£)499 <b>or</b> (£)1 (change) <b>AND</b> (£)515 <b>or</b> (£)1500
<b>Total marks for question</b>			<b>5</b>		



Ofqual



Llywodraeth Cynulliad Cymru  
Welsh Assembly Government



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