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Mark Scheme (SAMS)

September 2015

Pearson Edexcel Functional Skills Mathematics CBT Level 1 (MAT01)

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FUNCTIONAL SKILLS ONSCREEN (MATHEMATICS)
MARK SCHEME – LEVEL 1 – SAM 2015

Guidance for Marking Functional Mathematics Onscreen

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 onscreen tests, many questions have a mechanism for the candidate to give their decision or answer, as well as the working box. In most cases the marks are awarded for the process which leads to the answer. Full marks cannot be gained from simply clicking the correct answer. You must read what is in the working box. You may need to award marks for an answer which is only stated in the working box.
- 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 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 Marker Leader / Assistant Marker Leader.
- **Graphs**
  The mark schemes for most graph questions have this structure:

Process		Evidence
	1 or	1 of linear scale(s), labels, plotting (±1 small square)
	2 or	2 of linear scale(s), labels, plotting (±1 small square)
	3	all of linear scale(s), labels, plotting (±1 small square)

- Note that the mechanism usually restricts the candidate's choice of graph.
- 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.

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Question	Skill Standard	Process	Mark	Evidence
Q1	R1	Considers constraints	1 or	300 − 19(=281) **OR** Quantity ≥ 50 **and** Quantity × 5 = Cost **OR** 300 ÷ 5(=60) allow only whole numbers for quantity Figures may be seen in working box or order form.
	A5	Develops and checks solution	2 or	'281' ÷ 5(=56.2) **and** Quantity = 56 **OR** 'Cost' + 19 = Total Figures may be seen in working box or order form.
	I6	Fully correct solution	3	Quantity = 56, Cost = 280, Total = 299
Total marks for question			**3**	

FUNCTIONAL SKILLS ONSCREEN (MATHEMATICS)
MARK SCHEME – LEVEL 1 – SAM 2015

Question	Skill Standard	Process	Mark	Evidence
Q2	R2	Begins to interpret constraints	1 or	Selects free seats for 4 people **AND** not in rows A or F or seats 1 or 10 in any row **or** Seats adjacent: consecutive numbers all in the same row, or in adjacent rows with at least one pair with the same seat number.
	A4	Fully correct solution	2	Selects free seats: 4 single or 2 single and 1 double **AND** not in rows A or F or seats 1 or 10 in any row **AND** Seats adjacent: consecutive numbers all in the same row, or in adjacent rows with at least one pair with the same seat number.
	I6	Finds total cost for their selected seats	1	Total correct for their selection (minimum two seats) Allow follow through
Total marks for question			**3**	

FUNCTIONAL SKILLS ONSCREEN (MATHEMATICS)
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Question	Skills Standard	Process	Mark	Evidence
Q3(a)	R1	Process to find the perimeter	1	4.1 + 3.35 + 3.35 + 0.8 + 2.3(=13.9) **OR** 2.4 + 2.4 + 2.4 + 2.4 + 2.4 + 2.4(=14.4) oe **OR** 4.1 × 2 + 3.35 × 2 − 1(=13.9) **OR** Considers lengths against individual walls
	A4	Full process to find figures to compare	1 or	4.1 + 3.35 + 3.35 + 0.8 + 2.3(=13.9) **AND** 2.4 + 2.4 + 2.4 + 2.4 + 2.4 + 2.4(=14.4) **OR** '14.4' – '13.9' (=0.5) **OR** '13.9'÷ 2.4(=5.79...)
	I6	Correct decision based on correct figures	2	Yes **AND** 13.9 (m) and 14.4 (m) **OR** Yes **AND** 0.5 (m left) **OR** Yes **AND** 5.79...(skirting board required)
Q3(b)	A5	Valid check	1	Any valid check e.g. reverse calculation or alternative method
Total marks for question			**4**	

FUNCTIONAL SKILLS ONSCREEN (MATHEMATICS)
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Question	Skill Standard	Process	Mark	Evidence
Q4	R3	Begins the process to find kcal in one packet	1 or	150÷3(=50) **OR** 150÷100(=1.5)
	A4	Full process to find multiplier	2 or	100 ÷ '50'(=2) oe **OR** '1.5' ÷ 3(=0.5) oe
	A4	Full process to find kcal in 1 packet or kcal allowed per 100g	3	218 ÷ '2'(=109) oe **OR** '114'× '2' (=228) oe
	R1	Finds remainder of daily kcal allowance or total consumed	1 or	270−156 (=114) **OR** '109' + 156(=265)
	I6	Correct conclusion with accurate figures	2	Yes **AND** 109 (kcal) **and** 114 (kcal) **OR** Yes **AND** 265 (kcal) **OR** Yes **AND** 5 (kcal under) **OR** Yes **AND** 228 (kcal per 100g)
Total marks for question			**5**	

FUNCTIONAL SKILLS ONSCREEN (MATHEMATICS)
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Question	Skills Standard	Process	Mark	Evidence
Q5	R1	Starts process to find ¾ of normal price	1 or	799÷4 (=199.75) **OR** 799×3(=2397)
	A4	Complete process to find ¾ of normal price	2 or	'199.75' × 3(=599.25) oe **OR** '2397' ÷ 4(=599.25) oe
	I6	Correct answer	3	£599.25 correct money notation required
Total marks for question			**3**	

FUNCTIONAL SKILLS ONSCREEN (MATHEMATICS)
MARK SCHEME – LEVEL 1 – SAM 2015

Question	Skill Standard	Process	Mark	Evidence
Q6	R2	Starts to considers constraints	1 or	One activity assigned to all 4 groups **OR** One group has four different activities and nap
	I6	Develops solutions	2 or	At least eight of: Each group has 4 different activities and nap Each session has 4 different activities, except nap. Each activity and nap is seen 4 times Nap for all groups in the same session, session 3 or 4
	A5	Fully correct and checked solution	3	All of: Each group has 4 different activities and nap Each session has 4 different activities except nap. Each activity and nap is seen 4 times Nap for all groups in the same session, session 3 or 4
Total marks for question			**3**	

FUNCTIONAL SKILLS ONSCREEN (MATHEMATICS)
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Question	Skills Standard	Process	Mark	Evidence
Q7(a)	R3	Uses consistent units	1	Uses 3 or 5 **OR** ÷10000
	A4	Calculates the area	1	'3'× '5'(=15) **OR** 300 × 500(=15000)
	I6	Correct answer	1	15(m^2)
Q7(b)	A5	Checks their working	1	Valid check, e.g. one reverse calculation
Total marks for question			**4**	

FUNCTIONAL SKILLS ONSCREEN (MATHEMATICS)
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Question	Skill Standard	Process	Mark	Evidence
Q8	R3	Process to find the total for tickets for Kevin or for both children for 2 days	1 or	18 × 2(=36) **or** 11 × 4(=44) oe
	A4	Full process to find the total for tickets for all for 2 days	2	'36' + '44'(=80)
	R3	Full process to find the total cost with offer 1 or difference between hotel costs	1 or	899 +'80'+ 29.99 (=1008.99) **OR** 995 – 899(=96)
	A4	Full process to find the total cost with offer 2 or difference in total costs	2	995+10.99 (=1005.99) **OR** '80' + (29.99 − 10.99) – '96'(=3)
	I6	Finds correct figures to compare	1	(£)1008.99 **and** (£)1005.99 **OR** (£)3
	I6	Valid explanation ft. their figures provided at least 3 marks have been awarded	1	E.g. Offer 2 because it is £3 cheaper **OR** Offer 1 because although it is £3 more expensive it includes breakfast
Total marks for question			**6**	

FUNCTIONAL SKILLS ONSCREEN (MATHEMATICS)
MARK SCHEME – LEVEL 1 – SAM 2015

Question	Skills Standard	Process	Mark	Evidence
Q9	R2	Starts to process times	1 or	At least 2 activities linked to start times with elapsed time correct
	I6	Incorporates all constraints	2 or	Sequential time plan with appropriate start times (finish times may be implicit) Condone one error **or** one omission
	A5	Fully accurate checked time plan	3	Sequential time plan showing all start and finish times with elapsed time correct. Allow gaps between activities and shopping time split but all must finish by 5:00 pm Example solution 10.30 – 12:00 – shopping 12.00 – 13:00 – lunch 13.00 – 15:25 – cinema 15.25 – 16:40 – bowling 16.40 – leave
Total marks for question			**3**	

FUNCTIONAL SKILLS ONSCREEN (MATHEMATICS)
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Question	Skill Standard	Process	Mark	Evidence
Q10	R2	Considers constraints	1 or	Rectangle with sides in the ratio 1: 3 **OR** Two of: Resized rectangle at least 1 square from all the walls Resized rectangle at least 3 squares from the couch Resized rectangle at least 2 squares from the door Resized rectangle at least 2 squares from the bookshelf
	A4	Improves solution	2 or	Rectangle 1 square by 3 squares with at least 1 of: at least 1 square from all the walls at least 3 squares from the couch at least 2 squares from the door at least 2 squares from the bookshelf
	I6	Correct solution	3	Rectangle 1 square by 3 squares with all of: at least 1 square from all the walls at least 3 squares from the couch at least 2 squares from the door at least 2 squares from the bookshelf
Total marks for question			**3**	

FUNCTIONAL SKILLS ONSCREEN (MATHEMATICS)
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Question	Skills Standard	Process	Mark	Evidence
Q11	R1	Finds monthly mean for 2014 or starts to work with difference in totals	1	35940 ÷ 4(=8985) **OR** 250 × 4(=1000)
	R2	Begins the process to find the mean for 2015	1 or	8450 + 9230 + 10410 + 8900(=36990) **OR** ±535,±245,±1425,±85
	A4	Complete process to find mean for 2015 or the difference or process for difference in totals	2	'36990' ÷ 4(=9247.5) **OR** −535,+245,+1425,−85(=1050) **OR** '36990' – '1000'(=35990) **OR** 35940 + '1000'(=36940)
	I6	Full process to find figure to compare	1 or	'9247.5' – '8985'(=262.5) **OR** '1050'÷ 4(=262.5) **OR** '8985'+ 250(=9235) **OR** '35990' – 35940(=50) **OR** '36990'– '36940' (=50)
	I6	Correct answer with accurate figure	2	Yes **AND** (£) 262.5 **OR** Yes **AND** (£)9235 and (£)9247.5 **OR** Yes **AND** total profit is (£)50 more than needed over the 4 months
Total marks for question			**5**	

FUNCTIONAL SKILLS ONSCREEN (MATHEMATICS)
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Question	Skill Standard	Process	Mark	Evidence
Q12(a)	R2	Begins to substitute in the formula	1 or	32000 ×5 (=160000) **OR** 189500 − 29500(=160000)
	A4	Full substitution to the formula	2 or	'160000'+ 29500 (=189500) **OR** '160000'÷ 5 (=32000)
	I6	Correct answer	3	(£)189500 **OR** (£)32000 from fully correct working
Q12(b)	R3	Works with percentage	1 or	230000 × 0.8(=184000) oe **OR** 189500 × 100 ÷ 230000 (=82.39..)(%)
	I6	Correct answer with accurate figures	2	Yes **AND** (£)184000 **OR** Yes **AND** [82, 83](%) **OR** Yes **AND** (£)5500 more
Q12(c)	A5	Checks answer	1	Valid check e.g. reverse calculation
Total marks for question			**6**	

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