PEARSON EDEXCEL FUNCTIONAL SKILLS MATHEMATICS – SEPTEMBER 2019
MARK SCHEME – LEVEL 1

Marking Guidance for Functional Skills Mathematics Level 1

General

- All learners must receive the same treatment. Examiners must mark the first learner in exactly the same way as they mark the last.

- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded; exemplification will not be exhaustive. When examiners are in doubt regarding the application of the mark scheme, the response should be escalated to a senior examiner to review.

- Mark schemes should be applied positively. Learners 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. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the learner's response is not worthy of credit according to the mark scheme. If there is a wrong answer (or no answer) indicated in the answer box, always check the working in the body of the script (and on any diagrams), and award any marks appropriate from the mark scheme.

- Working is always expected. For short question where working may not be seen, correct answers may still be awarded full marks. For longer questions, an answer in brackets from the mark scheme seen in the body of the working, implies a correct process and the appropriate marks may be awarded.

- **Questions that specifically state that working is required**: learners who do not show working will get no marks – full details will be given in the mark scheme for each individual question.

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 learner uses to reach an answer. The evidence column shows the *most likely* examples that will be seen. If the learner gives different evidence valid for the process, examiners should award the mark(s).

- If working **is crossed out and still legible**, then it should be marked, as long as it has not been replaced by alternative work.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 work 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**, e.g. 528 instead of 523, may still gain process marks provided the question has not been simplified. Examiners should send any instance of a suspected misread to a senior examiner to review.

- It may be appropriate to **ignore subsequent work (isw)** when the learner's additional work does not change the meaning of their answer.

- **Correct** working followed by an **incorrect decision** may be seen, showing that the learner 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 learner presents a correct answer in working, and writes it incorrectly on the answer box e.g. 698 in the body and 689 in the answer box; mark the better answer if clearly only a transcription error. Examiners should send any instance of transcriptions errors to a senior examiner to review.

- **Incorrect method** if it is clear from the working that the correct answer has been obtained from incorrect working, award 0 marks. Examiners must escalate the response to a senior examiner to review.

- **Follow through marks (ft)** must only be awarded when explicitly allowed in the mark scheme. Where the process uses the learner'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 coming from a correct or set of correct processes.

  - When words are used in { } then this value does not need to come from a correct process but should be the value the learner believes to be required. The constraints on this value will be detailed in the mark scheme. For example, {volume} means the figure may not come from a correct process but is clearly the value learners believe should be used as the volume.

- Marks can usually be awarded where units are not shown. Where units are required this will be stated. For example, 5(m) indicates that the units do not have to be stated for the mark to be awarded.

- Learners 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, when a range of answers is given e.g. [12.5, 13] this is the inclusive closed interval.

- **Accuracy** of figures. Accept an answer which has been rounded or truncated from the correct figure unless other guidance is given. For example, for 12.66.. accept 12.6, 12.7, 12.66, 12.67 or any other more accurate figure.

- **Probability** answers must be given as a fraction, percentage or decimal. If a learner gives a decimal equivalent to a probability, this should be written to at least 2 decimal places (unless tenths). If a learner gives the answer as a percentage a % must be used. Incorrect notation should lose the accuracy marks, but be awarded any implied process marks. If a probability fraction is given then cancelled incorrectly, ignore the incorrectly cancelled answer.

- **Graphs.** 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. The minimum requirements will be given, but examiners should give credit if a title is given which makes the label obvious.

Section A (Non-Calculator)

Question	Process	Mark	Mark Grid	Evidence
Q1(a)	Process to calculate range	1 or	A	15323 – 8565 (=6758) **OR** Clearly identifies 15323 **and** 8565
	Accurate figure supported by working	2	AB	6758
Q1(b)	Valid check	1	C	e.g. 6758 + 8565 = 15323 **or** 15000 – 8000 = 7000
	Total marks for question	**3**		

Question	Process	Mark	Mark Grid	Evidence
Q2(a)	Accurate figure	1	A	6
Q2(b)	Accurate figure	1	B	−2
Q2(c)	Accurate figure	1	C	6.4
	Total marks for question	**3**		

Question	Process	Mark	Mark Grid	Evidence
Q3	Accurate measurements	1 or	A	2.7 ± 0.2 (cm) **and** 4.2 ± 0.2 (cm)
	Begins to work with scale	2	AB	'2.7' × 10 (=27) **or** '4.2' × 10 (=42)
	Process to find total cost	1 or	C	'14.99' + '24.49' (= 39.48) ft their distances
	Accurate figure from their measurement	2	CD	39.48
Total marks for question	**4**			

Question	Process	Mark	Mark Grid	Evidence
Q4	Works with consistent units of money or finds daily saving	1	A	$2.85 + 0.6(0) + 0.85$ (=4.3) oe **OR** $7.5(0) \div 5$ (=1.5) oe
	Process to find daily difference or weekly cost in either shop	1 or	B	'4.3' $-$ 3 (=1.3) oe **OR** '4.3' $\times$ 5 (=21.5) **or** 3 $\times$ 5 (=15)
	Full process to find figures to compare	2 or	BC	'1.3' $\times$ 5 (=6.5) oe **OR** '21.5' $-$ 7.5 (=14) **and** 3 $\times$ 5 (=15) **OR** 7.5 $\div$ 5 (=1.5) **and** '4.3' $-$ 3 (=1.3) **OR** '21.5' $-$ '15' (=6.5)
	Valid decision and accurate figures	3	BCD	No **AND** (£)6.5 oe **OR** No **AND** (£)14 oe **and** (£)15 **OR** No **AND** (£)1.5(0) **and** (£)1.3(0) **OR** No **AND** (£)1.(00) (total difference)
Total marks for question	**4**			

Section B (Calculator)

Question	Process	Mark	Mark Grid	Evidence
Q1	Begins to work with percentage	1 or	A	$68 \times 5 \div 100$ (=3.4(0)) oe **OR** $(100 + 5) \div 100$ (= 1.05) oe
	Full process to work with percentage increase	2 or	AB	$68 + $ '3.4' (= 71.4) **OR** $68 \times $ '1.05' (= 71.4) oe
	Accurate figure	3	ABC	(£)71.40
Total marks for question		**3**		

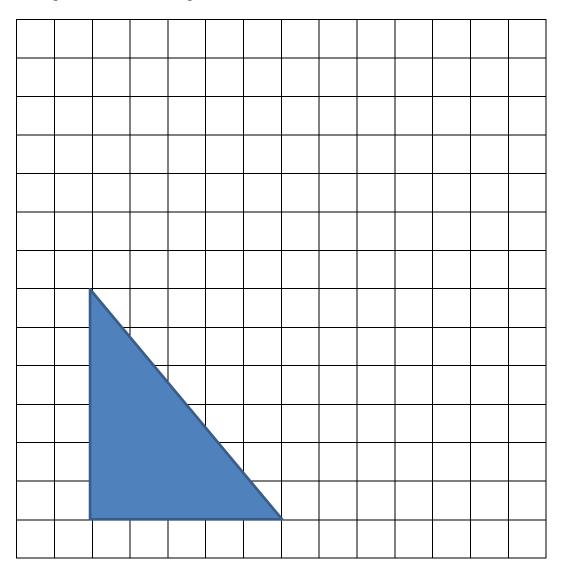| Question	Process	Mark	Mark Grid	Evidence
Q2	Completes the frequency column	1	A	10, 43, 22, 11
	Begins to draw graph or bar chart	1 or	B	One of: Linear scale Completes labels on horizontal and vertical axes Accurate plotting
	Develops graph or bar chart	2 or	BC	Two of: Linear scale Completes labels on horizontal and vertical axes Accurate plotting
	Fully correct graph or chart	3	BCD	All of: Suitable linear scale Completes labels on horizontal and vertical axes Accurate plotting Minimum labels 1-5, 6-10, 11-15, >15, number of visits, freq
Total marks for question	**4**			

Question	Process	Mark	Mark Grid	Evidence
Q3	Begins to work with area	1 or	A	15×9 (=135) **OR** 4×3 (=12)
	Process to find both areas or the cost of one area	2 or	AB	15×9 (=135) **and** 4×3 (=12) **OR** '135'$\times 36$ (=4860) **OR** '12' $\times 36$ (=432)
	Process to find area of flooring or cost of both areas	3 or	ABC	e.g. '135' − '12'(=123) **OR** '135'$\times 36$ (=4860) **and** '12' $\times 36$ (=432)
	Full process to find cost of flooring	4 or	ABCD	'123' $\times 36$ (= 4428) **OR** '4860' − '432' (=4428)
	Accurate figure	5	ABCDE	(£)4428
Total marks for question	**5**			

Question	Process	Mark	Mark Grid	Evidence
Q4(a)	Correct solution	1	A	Select shape 1
Q4(b)	correct solution	1	B	Select shape 4
Q4(c)	Fully correct solution	1	C	4 (faces) 6 (edges) 4 (vertices)
	Total marks for question	3		

Question	Process	Mark	Mark Grid	Evidence
Q5	Begins to group data	1 or	A	e.g. 160 + 60 + 150 (=370)
	Accurate total for each quarter	2	AB	Q1 = 370, Q2 = 130, Q3 = 230, Q4 = 300
	Designs suitable table	1	C	Table with input opportunities for Q1, Q2, Q3, Q4 and sales completed with their values for Q1, Q2, Q3, Q4
	Total marks for question	3		

Question	Process	Mark	Mark Grid	Evidence
Q6(a)	Complete diagram	1	A	Draws the parallelogram
Q6(b)	Draws lines of symmetry	1	B	Draws all 5 lines of symmetry and no extras
Q6(c)	Correct answer	1	C	Selects obtuse angle
Q6(d)	Begins to work with scale or right angle	1 or	D	Draws a triangle with **one** of: right angle one side 5 sq one side 6 sq
	Improves solution	2 or	DE	Draws a triangle with **two** of: right angle one side 5 sq one side 6 sq
	Accurate drawing	3	DEF	Draws a triangle with **all** of: one side 5 sq one side 6 sq right angle between these sides
Total marks for question	**6**			

Example of a solution for question Q6(d)

Question	Process	Mark	Mark Grid	Evidence
Q7	Begins to work with equivalences	1 or	A	e.g. $\frac{46}{100}$ and $\frac{56}{100}$ **OR** $14 \div 25 \times 100$ (=56) **OR** $46 \div 100$ (=0.46) **and** $6 \div 10$ (=0.6)
	Converts results to allow comparison	2 or	AB	e.g. $\frac{46}{100}$ and $\frac{56}{100}$ and $\frac{56}{100}$ and $\frac{60}{100}$ **OR** $14 \div 25 \times 100$ (=56) **and** $13 \div 20 \times 100$ (=65) **and** $6 \div 10 \times 100$ (=60) **OR** $46 \div 100$ (=0.46) **and** $14 \div 25$ (=0.56) **and** $13 \div 20$ (=0.65) **and** $6 \div 10$ (=0.6)
	Correct order fully supported by accurate figures	3	ABC	e.g. English, art & design, maths, public services **AND** $\frac{65}{100}$ and $\frac{60}{100}$ and $\frac{56}{100}$ and $\frac{46}{100}$ oe
Total marks for question	**3**			

Question	Process	Mark	Mark Grid	Evidence
Q8(a)	Simplifies a fraction	1	A	$\frac{1}{20}$
Q8(b)	Begins to work with probability	1 or	B	15 + 23 (=38) **OR** $\frac{B}{60}$ where $0 < B < 60$ **and** B is an integer
	Accurate figure	2	BC	$\frac{38}{60}$ oe
	Total marks for question	**3**		

Question	Process	Mark	Mark Grid	Evidence
Q9	Works with first formula	1	A	27.5 ÷ 2.5 (=11) **OR** '10' × 2.5 (=25)
	Begins to work with second formula	1 or	B	'11' × 3 (=33) **OR** 38 − 8 (=30)
	Full process to work with second formula	2 or	BC	'33' + 8 (=41) **OR** '30' ÷ 3 (=10)
	Valid decision with accurate figures	3	BCD	e.g. No **AND** 41 (shoe size) **OR** No **AND** 10 (inches) **and** 11 (inches) **OR** No **AND** 25 (cm)
Total marks for question	**4**			

Question	Process	Mark	Mark Grid	Evidence
Q10	Begins process to work with mean	1 or	A	$105 + 260 + 49 + 257 + 234$ (= 905) **OR** 200×5 (=1000)
	Full process to work with mean	2 or	AB	'905' ÷ 5 (=181) **OR** $105 + 260 + 49 + 257 + 234$ (= 905) **and** 200×5 (=1000)
	Valid decision with accurate figure	3	ABC	No **AND** 181 (calories) No **AND** 1000 (calories) **and** 905 (calories)
Total marks for question		3		

Question	Process	Mark	Mark Grid	Evidence
Q11(a)	Works with consistent units	1	A	e.g. 10 000 (m) or 0.09 (km) or 0.075 (km) May be seen in subsequent working
	Works with perimeter	1 or	B	$75 + 90 + 75 + 90$ (=330) oe
	Full process to find the minimum number of laps	2 or	BC	'10 000' ÷ 330 (=30.3) oe
	Accurate figure	3	BCD	31 (laps)
Q11(b)	Valid check	1	E	e.g. 31×330 (=10230) or 30×330 (=9900)
Total marks for question		5		