PEARSON EDEXCEL FUNCTIONAL SKILLS MATHEMATICS
MARK SCHEME – LEVEL 1 SET 4

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- If working **is crossed out and still legible**, then it should be marked, as long as it has not been replaced by alternative work.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

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- **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)

PMAT1/N04				
Question	**Process**	**Mark**	**Mark Grid**	**Evidence**
Q1	Process to work with cost	1 or	A	11.5×5 (=57.5) **OR** $65 \div 5$ (=13)
	Process to find weekly saving	2 or	AB	$65 - $ '57.5' (=7.5) **OR** '13' $- 11.5$ (=1.5) **and** '1.5' $\times 5$ (=7.5)
	Accurate figure	3	ABC	7.50
Total marks for question		**3**		

Question	Process	Mark	Mark Grid	Evidence
Q2	Uses an appropriate fraction or combines appropriate fractions	1 or	A	$\frac{3}{4}$ **or** $\frac{7}{10}$ oe
	Process to work out estimate	2 or	AB	e.g. $3 \times 120 \div 4$ (=90) **OR** $7 \times 120 \div 10$ (=84)
	Accurate figure with supportive working	3	ABC	90 **OR** 84
Total marks for question		**3**		

Question	Process	Mark	Mark Grid	Evidence
Q3	Uses consistent units	1	A	0.15 (ml) **or** '3000' ÷ 1000 (=3) May be seen in subsequent working
	Begins to work with proportion	1 or	B	e.g. 200 ÷ 10 (=20) **OR** 150 ÷ 10 (=15)
	Full process to work with proportion	2 or	BC	e.g. '20' × 150 (=3000) **OR** '15' × 200 (=3000) **OR** 200 × 150 ÷ 10 (=3000)
	Accurate figure	3	BCD	3
Total marks for question		**4**		

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Question	Process	Mark	Mark Grid	Evidence
Q4	Process to work with square	1	A	6^2 (=36) May be seen in subsequent working
	Process to begin work with formula	1 or	B	e.g. {area} × 9 (=324) **OR** {area} ÷ 3 (=12) **OR** 100 × 3 (=300) **OR**
	Full process to work with formula	2 or	BC	e.g. {area} × 9 ÷ 3 (=108) **OR** 100 × 3 ÷ 9 (=33.3..)
	Valid decision with accurate figure	3	BCD	e.g. Yes **AND** 108 **OR** Yes **AND** 36 **and** 33(.3..)
Total marks for question	**4**			

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Section B (Calculator)

PMAT1/C04				
Question	**Process**	**Mark**	**Mark Grid**	**Evidence**
Q1	Process to convert time or calculate with time using part of an hour	1 or	A	e.g. ¾ × 60 (=45 mins) **OR** 1 ¾ × 60 (=105 mins or 1 hr 45 mins) **OR** 9:20 – 25 (=8:55) **or** 9:20 – 45 (=8:35) **OR** 1 ¾ (hr) + 25 (mins) (=130 mins) oe
	Full process to find waking time	2 or	AB	e.g. 9:20 – 25 – '105' (=07:10)
	Accurate time	3	ABC	(0)7:10
Total marks for question		**3**		

Question	Process	Mark	Mark Grid	Evidence
Q2(a)	Process to convert weight	1	A	395.4 ÷ 1000 (=0.3954) **OR** '858 018' ÷ 1000 (=858.018) May be seen in subsequent working
	Process to multiply decimals	1 or	B	2170 × 395.4 (=858 018) **OR** 2170 × '0.3954' (=858.018)
	Accurate figure	2	BC	858.02 NB If 858.018 is seen unsupported award 2 marks
Q2(b)	Valid check using estimation	1	D	e.g. 2000 × 400 ÷ 1000 = 800 so my answer is sensible **or** 2000 × 400 = 800 000 and this is just below 858 018 **or** 860 × 1000 ÷ 400 = 2150 and this is just below 2170 **or** 860 × 1000 ÷ 2200 = 390.90… and this is just below 400
Total marks for question	**4**			

Question	Process	Mark	Mark Grid	Evidence
Q3(a)	Begins to construct graph	1 or	A	One of Completes linear scale Accurate plotting (± 2mm)
	Fully correct graph	2	AB	Both of Completes linear scale Accurate plotting (± 2mm)
Q3(b)	Process to work with percentage or fraction	1 or	C	$15 \div 100 \times 120$ (=18) **OR** $152 \div 8$ (=19)
	Full process to find figures to compare	2 or	CD	$15 \div 100 \times 120$ (=18) **and** $152 \div 8$ (=19)
	Valid decision with accurate figures	3	CDE	(Shop) B **AND** 18 **and** 19 **OR** (Shop) B **AND** 1 (difference)
Total marks for question	**5**			

Sample graph for Q3(a)
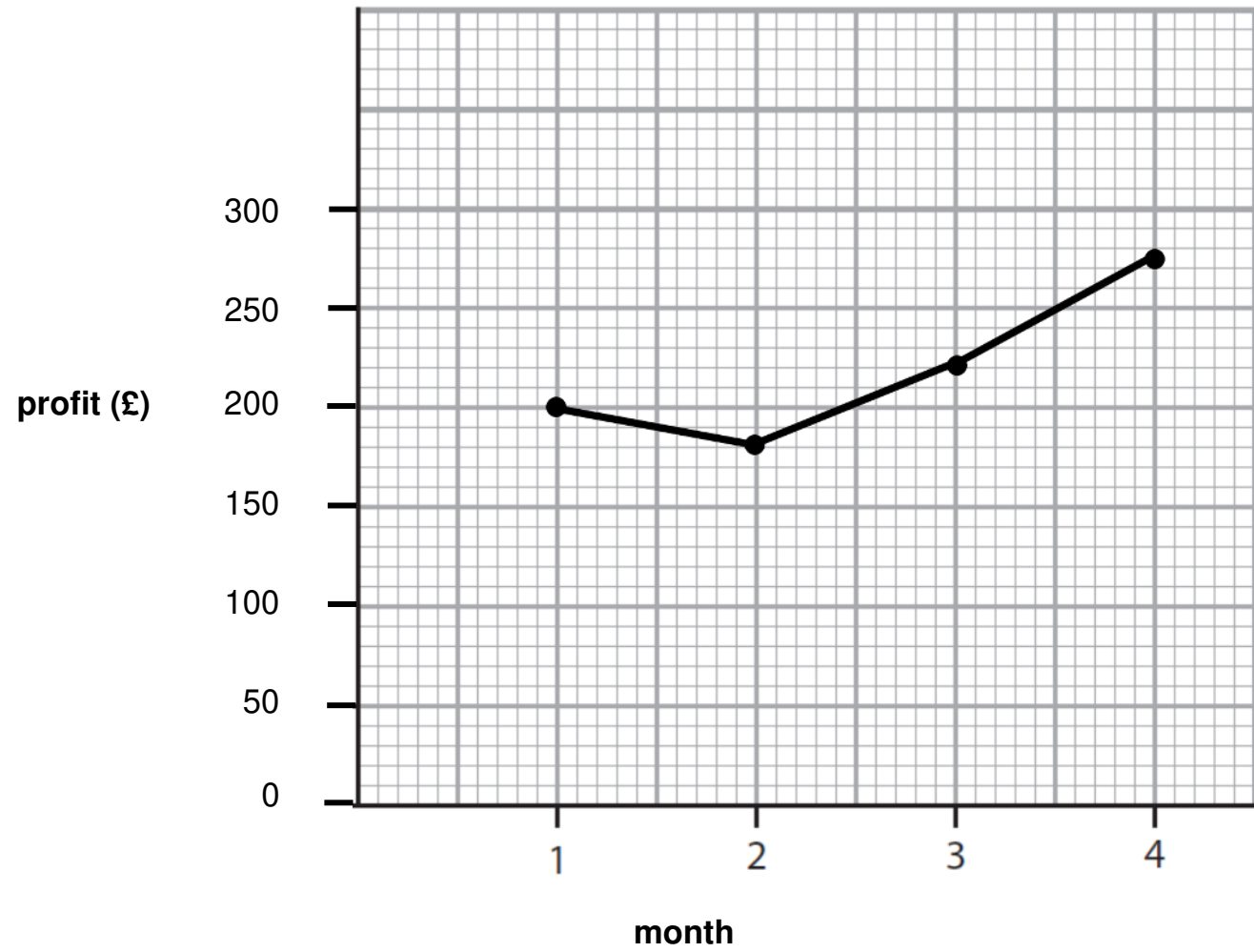
Question	Process	Mark	Mark Grid	Evidence
Q4	Begins process to work with amounts	1 or	A	e.g. 465.2 + 10 (=475.2) **OR** 202.69 – 10 (=192.69) **OR** 202.69 – 465.2 (= –262.51) **or** 465.2 – 202.69 (=262.51)
	Full process to work with amounts	2 or	AB	e.g. '475.2' – 202.69 (=272.51) **OR** 465.2 – 192.69 (=272.51) **OR** '262.51' + 10 (=272.51)
	Accurate figure	3	ABC	272.51
Total marks for question	**3**			

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Question	Process	Mark	Mark Grid	Evidence
Q5(a)	Process to work with symmetry	1 or	A	Pattern of two colours with at least one line of symmetry (not two lines of symmetry)
	Correct pattern shaded	2	AB	Fully correct pattern
Q5(b)	Selects correct net	1	C	(net) D
Total marks for question		**3**		
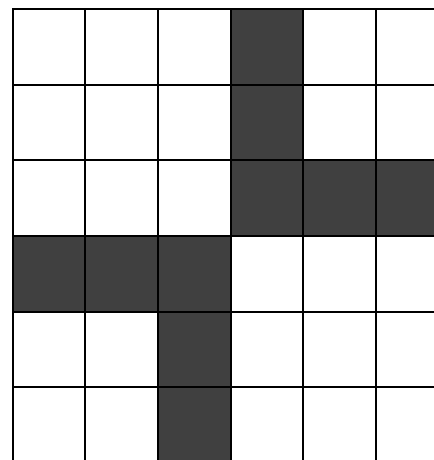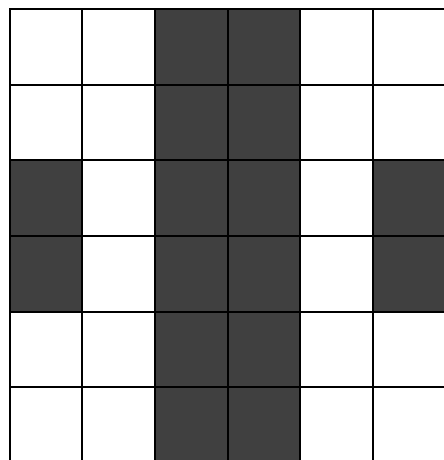
Question	Process	Mark	Mark Grid	Evidence
Q6(a)	Accurate figure	1	A	(0)75 allow ±2 tolerance
Q6(b)	Process to find range	1 or	B	53 – 38 (=15) **OR** 38 to 53
	Accurate figure	2	BC	15
Q6(c)	Begins process to work with mean	1 or	D	e.g. 47 + 42 + 53 + 40 + 38 (=220) **OR** 45 × 5 (=225)
	Full process to find figures to compare	2 or	DE	'220' ÷ 5 (=44) **OR** 47 + 42 + 53 + 40 + 38 (=220) **AND** 45 × 5 (=225)
	Valid decision with accurate figure	3	DEF	Yes **AND** 44 **OR** Yes **AND** 220 **and** 225
Total marks for question	**6**			

Question	Process	Mark	Mark Grid	Evidence
Q7	Begins process to find length of fencing	1 or	A	15.75 + 6.2 (=21.95) **or** 2 × 15.75 (=31.5) **or** 6.2 × 2 (=12.4) **or** 15.75 – 1.5 (=14.25) **or** 6.2 – 1.5 (=4.7)
	Full process to find length of fencing	2 or	AB	e.g. 2 × (15.75 + 6.2) – 1.5 (=42.4)
	Accurate figure	3	ABC	43
Total marks for question		3		

Question	Process	Mark	Mark Grid	Evidence
Q8	Begins process to work with scale diagram	1 or	A	e.g. measures or indicates 2 cm or 4.5 cm
	Full process to work with scale in at least one dimension	2 or	AB	e.g. 2 × 40 (= 80) **or** 4.5 × 40 (= 180) **OR** 80 **or** 180 indicated on grid
	Accurate figure with fully correct working	3	ABC	(Fridge) C **AND** 80 (cm) **AND** 180 (cm)
Total marks for question		3		

Question	Process	Mark	Mark Grid	Evidence
Q9(a)	Begins process to work with discount	1	A	$45 \div 100 \times 170$ (=76.5) oe **OR** $(100 - 45) \div 100$ (=0.55)
	Full process to work with discount	1 or	B	$170 - \text{'}76.5\text{'}$ (=93.5) **OR** $\text{'}0.55\text{'} \times 170$ (=93.5) oe **OR** $170 - 100$ (=70)
	Valid decision with accurate figure	2	C	Yes **AND** (£)93.5(0) **OR** Yes **AND** (£)76.5(0) **and** (£)70
Q9(b)	Valid check using reverse calculation	1	D	e.g. $93.5 \div 0.55 = 170$ **and** $1 - 0.55 = 0.45$
Total marks for question		**4**		

Question	Process	Mark	Mark Grid	Evidence
Q10(a)	Works with probability scale	1	A	Indicates 0.5 on the scale
Q10(b)	Gives probability	1 or	B	$\frac{a}{12}$ **and** $0 < a < 12$ **OR** $\frac{7}{b}$ **and** $b > 7$ a and b must be integers
		2	BC	$\frac{7}{12}$ oe
Total marks for question		**3**		

Question	Process	Mark	Mark Grid	Evidence
Q11	Begins process to work with percentage or percentage increase or complete finding extra people the area allows	1 or	A	e.g. $20 \div 100 \times 65$ (=13) **OR** $(100 + 20) \div 100$ (=1.2) **OR** ('325.5' – '260') $\div 4$ (=16.375)
	Complete process to work with percentage increase or to compare percentage increase or find figures to compare (people)	2	AB	e.g. '13' + 65 (=78) **or** '1.2' $\times$ 65 (=78) **OR** '13' $\times$ 4 (=52) **and** '325.5' – '260' (=65.5) **OR** ('325.5' – '260') $\div 4$ (=16.375) **and** $20 \div 100 \times 65$ (=13)
	Process to work with area or space per person	1 or	C	e.g. 21×15.5 (=325.5) **OR** '78' $\times$ 4 (=312) **OR** 65×4 (=260)
	Process to find figures to compare or develops area solution	2 or	CD	e.g. 21×15.5 (=325.5) **and** '78' $\times$ 4 (=312) **OR** '325.5' $\div 4$ (=81.3..) **OR** '325.5' $\div$ '78' (=4.17…) **OR** 21×15.5 (=325.5) **and** 65×4 (=260)
	Valid decision with accurate figures	3	CDE	e.g. Yes **AND** 325(.5) (m^2) **and** 312 (m^2) **OR** Yes **AND** 78(people) **and** 81(.3..) (people) **OR** Yes **AND** 4.1(7..) (m^2 per person) **OR** Yes **AND** 52 (m^2) **and** 65(.5) (m^2) **OR** Yes **AND** 16(.375) people **and** 13 (people)
Total marks for question		**5**		