Marking Guidance for Functional Skills Mathematics Level 2

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- If working **is crossed out and still legible**, then it should be marked, as long as it has not been replaced by alternative work.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

- **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.

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PEARSON EDEXCEL FUNCTIONAL SKILLS MATHEMATICS
MARK SCHEME – LEVEL 2 SET 10

Section A (Non-Calculator)

PMAT2/N10

Question	Process	Mark	Mark Grid	Evidence
Q1(a)	Accurate figure	1	A	$\dfrac{2}{5}$
Q1(b)	Process to use place value correctly	1 or	B	e.g. 1 8 . 1 7 (0) + 4 . 3 9 8 (2 2 . 5 6 8) **OR** digits 68 seen in final answer, e.g. (22.5)68
	Accurate figure	2	BC	22.568
Total marks for question		**3**		

Question	Process	Mark	Mark Grid	Evidence
Q2	Works with common denominator or improper fraction	1 or	A	e.g. $\dfrac{6}{8}$ **or** $\dfrac{23}{4}$ **or** $\dfrac{21}{8}$ oe
	Full process to subtract fractions	2 or	AB	e.g. $5 - 2 + \dfrac{'6' - 5}{8}$ $(=3\frac{1}{8})$ **or** $\dfrac{'46' - '21'}{8}$ $(=\frac{25}{8})$ oe
	Accurate figure given as a mixed number	3	ABC	$3\dfrac{1}{8}$ oe NB this question requires working shown
Total marks for question		**3**		

Question	Process	Mark	Mark Grid	Evidence
Q3	Works with offer A	1	A	24 × 30 (=720)
	Begins to work with offer B	1 or	B	e.g. 954 ÷ 100 × 22 (=209.88) oe **OR** (100 – 22) ÷ 100 (=0.78)
	Full process to work with offer B or finds figures to compare	2 or	BC	e.g. 954 – '209.88' (=744.12) oe **OR** '720' + '209.88' (=929.88) **OR** 954 ÷ 100 × 22 (=209.88) **and** 954 – '720' (=234)
	Valid decision with accurate figures	3	BCD	e.g. (Offer) A **AND** (£) 720 **and** (£) 744(.12) **OR** (Offer) A **AND** (£) 929(.88) **OR** (Offer) A **AND** (£) 209(.88) **and** (£) 234
Total marks for question		**4**		

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Question	Process	Mark	Mark Grid	Evidence
Q4	Process to find missing length	1	A	100 – 90 (=10)
	Begins process to work with area	1 or	B	e.g. 64 × 100 (=6400) **OR** $\frac{1}{2}$ × 64 × '10' (=320) **OR** 64 × 90 (=5760)
	Full process to work out a total	2	BC	e.g. '6400' – '320' (=6080) **OR** '5760' + '320' (=6080) **OR** '6400' × 21 − '320' × 21 (=127680) **OR** '6400' × 21 ÷ 7 − '320' × 21 ÷ 7 (=18240)
	Begins to work with donation	1 or	D	e.g. {area} × 21 (=127680) **OR** 21 ÷ 7 (=3) **OR** {area} ÷ 7 (=868.5..)
	Process to work out donation	2 or	DE	e.g. {area} × 21 ÷ 7 (=18240) **OR** {area} × '3' (=18240)
	Accurate figure	3	DEF	18240 NB This question requires working shown
	Total marks for question	**6**		

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Section B (Calculator)

PMAT2/C10				
Question	**Process**	**Mark**	**Mark Grid**	**Evidence**
Q1	Process to begin to work with ratio	1 or	A	$720 \div (9 + 7)$ (=45) **OR** $400 \div 9$ (=44.4..)
	Full process to work with ratio	2 or	AB	$720 \div (9 + 7) \times 9$ (=405) **OR** '44.4..'$\times (9 + 7)$ (=711.1..) **OR** $720 \div (9 + 7)$ (=45) **and** $400 \div 9$ (=44.4..)
	Valid decision with accurate figure	3	ABC	No **AND** (£)405 **OR** No **AND** (£)711(.1..) **OR** No **AND** (£)45 **and** (£)44(.4..)
	Total marks for question	**3**		

Question	**Process**	**Mark**	**Mark Grid**	**Evidence**
Q2(a)	Completes table	1	A	3
Q2(b)	Full process to work with probability	1 or	B	e.g. $\dfrac{a}{5 + 7 + 6}$ where $0 < a < 18$ **or** $\dfrac{7}{b}$ where $b > 7$
	Accurate figure	2	BC	$\dfrac{7}{18}$ oe
	Total marks for question	**3**		

Question	Process	Mark	Mark Grid	Evidence
Q3	Process to work with perimeter of circle	1 or	A	$\pi \times 2.8$ (=8.796..) **or** 3.14×2.8 (=8.792) oe **OR** $3.14 \times$ '9.24' (=29.0136) oe
	Full process to work out perimeter	2	AB	'8.79..' + 2 + 2 (=12.79..) oe **OR** '29.0136' + '6.6' + '6.6' (=42.2136)
	Process to use conversion or find figures to compare	1 or	C	e.g. 2×3.3 (=6.6) **or** 2.8×3.3 (=9.24) **OR** $40 \div 3.3$ (=12.12..) **OR** '12.796..' $\times 3.3$ (=42.22…) oe **OR** '8.792' $\times 3.3$ (=29.0136) **OR** $40 \div$ '12.792' (=3.126..)
	Valid decision with accurate figures	2	CD	e.g. No **AND** 42(.2..) (feet) **OR** No **AND** 12.1(2..) (m) **and** 12.7(9..) (m) **OR** No **AND** 3.1(26..) (feet/m) NB accept use of π instead of 3.14 throughout
	Total marks for question	**4**		

Question	Process	Mark	Mark Grid	Evidence
Q4(a)	Process to work with median	1 or	A	$(59 + 62) \div 2$ (=60.5) **OR** $(59 + 62)$ (=121) **and** 61×2 (=122)
	Valid decision with accurate figure	2	AB	No **AND** 60.5 **OR** No **AND** 121 **and** 122
Q4(b)	Valid check	1	C	e.g. $60.5 \times 2 = 121$
	Total marks for question	**3**		

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PEARSON EDEXCEL FUNCTIONAL SKILLS MATHEMATICS
MARK SCHEME – LEVEL 2 SET 10

Question	Process	Mark	Mark Grid	Evidence
Q5(a)	Plots the point on scatter diagram	1	A	Plots point (12, 45)
Q5(b)	States the correlation type	1	B	Positive
Q5(c)	Interprets scatter diagram	1	C	Identifies 8 **or** 11
	Full process to express as a percentage	1 or	D	'8' ÷ '11' × 100 (=72.72..)
	Accurate figure	2	DE	72(.727…) **or** 73
Total marks for question	**5**			

Question	Process	Mark	Mark Grid	Evidence
Q6	Begins process to work with percentage	1 or	A	400 ÷ 100 × 14 (=56) **OR** (100 + 14) ÷ 100 (=1.14)
	Full process to find amount required	2 or	AB	400 + '56' (=456) oe
	Accurate figure	3	ABC	456
Total marks for question	**3**			

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Question	Process	Mark	Mark Grid	Evidence
Q7(a)	Interprets conversion graph to find one correct value	1 or	A	48 **or** 40
	Finds both correct values	2	AB	48 **and** 40 correctly placed
Q7(b)	Full process to use conversion factor	1 or	C	$62 \div 4.546$ (=13.6383..)
	Accurate figure correct to 2 decimal places	2	CD	13.64
	Total marks for question	**4**		

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Question	Process	Mark	Mark Grid	Evidence
Q8	Identifies mode	1	A	1.50 identified May be seen in subsequent calculations
	Begins process to work with bricks	1 or	B	e.g. 7.9 ÷ {brick length} (=36.74..) **or** 8.6 ÷ {brick length} (=40) **OR** 7.9 ÷ {brick width} (=121.53..) **or** 8.6 ÷ {brick width} (=132.30..) **OR** 9 × (brick height) (=0.9225) **OR** {brick length} × {brick width} × {brick height} (=0.00143..)
	Develops solution	2	BC	e.g. '37' × 9 (=333) **or** '40' × 9 (=360) **OR** '122' × 9 (=1098) **or** '133' × 9 (=1197) **OR** '0.9225' × 7.9 × 8.6 (=62.67465) **and** {brick length} × {brick width} × {brick height} (=0.00143..)
	Begins process to work with cost of bricks or total number of bricks needed	1 or	D	e.g. '1.5' × '333' (=499.5) **or** '1.5' × '360' (=540) **or** '1.5' × '1098' (=1647) **or** '1.5' × '1197' (=1795.5) **OR** '1.5' × { number of bricks} **OR** '37' × 9 × '133' (=44289) **or** '40' × 9 × '122' (=43920) **OR** '62.67465' ÷ '0.00143..' × '1.5' (=65630.76…)
	Full process to work with both types of costs	2 or	DE	e.g. '1.5' × {number of bricks} + 75
	Accurate figure	3	DEF	e.g. 66508.50 **or** 65955
Total marks for question		**6**		

Question	Process	Mark	Mark Grid	Evidence
Q9	Begins process to work with inverse proportion	1 or	A	e.g. 3 × 2 (=6) **OR** 2 ÷ 5 (=0.4) **OR** 5 ÷ 2 (=2.5) **OR** 3 ÷ 5 (=0.6)
	Full process to work with inverse proportion	2 or	AB	e.g. '6' ÷ 5 (=1.2) **OR** 3 × '0.4' (=1.2) **OR** 3 ÷ '2.5' (=1.2) **OR** 2 × '0.6' (=1.2)
	Accurate figure	3	ABC	1.2 Condone 1hr 12 mins **or** 72 mins
Total marks for question		3		

Question	Process	Mark	Mark Grid	Evidence
Q10(a)	Works with BIDMAS	A	1 or	$\left(\dfrac{13.608}{3.24}\right)$ (= 4.2) **and** '4.2' × '4.2' (=17.64) **OR** 4.2 stated or used
	Accurate figure	AB	2	17.64 oe
Q10(b)	Accurate figure	C	1	0.375
Total marks for question		3		

Question	Process	Mark	Mark Grid	Evidence
Q11	Begins to work with volume	1 or	A	$10 \times 2 \times 12$ (=240) **OR** $15 \times 1.5 \times 12$ (= 270)
	Full process to work with volume	2	AB	$10 \times 2 \times 12 + 15 \times 1.5 \times 12$ (=510)
	Begins to work with rate of flow	1 or	C	e.g. 27×9 (=243) **or** 31.2×9 (=280.8) **OR** $27 + 31.2$ (=58.2) **OR** {volume} $\div 9$ (=56.66..)
	Full process to find figures to compare	2 or	CD	e.g. $9 \times$ '58.2' (=523.8) oe **OR** {volume} $\div$ '58.2' (=8.76..) **OR** $27 + 31.2$ (=58.2) **and** {volume} $\div 9$ (=56.66..)
	Valid decision with accurate figure	3	CDE	e.g. Yes **AND** 510(m^3) and 523(.8)(m^3) **OR** Yes **AND** 8(.76..hr) **OR** Yes **AND** 58(.2) (m^3/hr) **and** 56(.66..) (m^3/hr)
Total marks for question		**5**		

Question	Process	Mark	Mark Grid	Evidence
Q12(a)	Process to multiply a consistent value of number of visits by frequency	1 or	A	e.g. 2 of 8×4 **or** 24×11 **or** 12×18 **or** 6×25 **OR** Allow use of 'midpoints' provided they are within an interval including the end points 2 of 32 **or** 264 **or** 216 **or** 150
	Full process to find the estimate of the mean	2	AB	$(8 \times 4 + 24 \times 11 + 12 \times 18 + 6 \times 25) \div (8 + 24 + 12 + 6)$ (=13.24) (condone 1 error)
	Begins process to work with percentage change	1 or	C	e.g. $(100 + 16) \div 100$ (=1.16) oe **OR** {estimated mean} = 116% **OR** {estimated mean} ÷ 116 (=0.114..) **OR** $100 \div 116$ (=0.862..)
	Full process to find estimated mean for July	2 or	CD	e.g. {estimated mean} ÷ '1.16' (=11.41..) **OR** '0.114..' × 100 (=11.41..) **OR** '0.862..' × {estimated mean} (=11.41..)
	Accurate figure	3	CDE	11.4(1…) **or** 11 **or** 12 (visits)
Q12(b)	Valid check using a reverse calculation	1	F	e.g. $13.24 \times 50 = 62$
Total marks for question		**6**		

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