

**EDEXCEL PEARSON FUNCTIONAL SKILLS MATHEMATICS
MARK SCHEME – LEVEL 1 SAMPLE ASSESSMENT MATERIAL**

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- If working is **crossed out and still legible**, then it should be marked, as long as it has not been replaced by alternative work.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

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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.

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Section A (Non-Calculator)

Question	Process	Mark	Mark Grid	Evidence
Q1	Writes number in figures	1	A	120000 May be seen or used in subsequent working
	Process to subtract figures	1 or	B	{Figure} – 118200 (= 1800) oe Allow figure to be a number that includes the digits 1 and 2
	Accurate figure supported by working	2	BC	1800
Total marks for question		3		

Question	Process	Mark	Mark Grid	Evidence
Q2(a)	Accurate figure	1	A	144
Q2(b)	Accurate figure	1	B	68
Q2(c)	Accurate figure	1	C	-32
Total marks for question		3		

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Question	Process	Mark	Mark Grid	Evidence
Q3(a)	Process to find length of base	1 or	A	$20 \div 4 (= 5)$
	Process to find volume	2 or	AB	$'5' \times '5' \times 8 (= 200)$
	Accurate figure with correct units	3	ABC	200 cm^3
Q3(b)	Valid reverse check	1	D	e.g. $'200' \div '5' = 40$ and $'40' \div '5' = 8$ and $'5' \times 4 = 20$ NB fit their volume and side length
Total marks for question		4		

Question	Process	Mark	Mark Grid	Evidence
Q4(a)	Accurate figure	1	A	11.35
Q4(b)	Rounds a number to a manageable figure	1	B	e.g. Use of 10 or 50 or 25 or 20 May be seen in a calculation
	Calculates a total value using their rounded figure(s)	1 or	C	e.g. $'10' \times '50' \times '25' (= 12500)$ OR $'10' \times '50' \times '20' (= 10000)$ Allow $23 \times 49 \times 9.9 (= 11157.3)$ for this mark only
	Accurate figure from their estimation(s)	2	CD	e.g. 12500 OR 10000
Total marks for question		4		

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Section B (Calculator)

Question	Process	Mark	Mark Grid	Evidence
Q5	Process to begin to work with formula	1 or	A	e.g. $100 \div 8 (= 12.5)$ OR $70 \div 5 (= 14)$
	Full process to work with formula	2 or	AB	$100 \div 8 \times 5 (= 62.5)$ oe OR $70 \div 5 \times 8 (= 112)$ oe
	Valid decision with accurate figures	3	ABC	No AND 62.5 (miles per hour) OR No AND 112 (km per hour)
Total marks for question		3		

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Question	Process	Mark	Mark Grid	Evidence
Q6	Begins to work with percentage discount	1 or	A	$38 \times 0.15 (= 5.7)$ OR $1 - 0.15 (= 0.85)$ OR '114' $\times 0.15 (= 17.1)$
	Full process to work with percentage discount	2	AB	$38 \times 0.85 (= 32.3)$ oe OR '114' $\times 0.85 (= 96.9)$ oe
	Process to find total cost with or without discount or find the amount of budget left	1	C	$38 \times 30 \div 10 (= 114)$ OR '32.3' $\times 30 \div 10 (= 96.9)$ OR $100 - '32.3' - '32.3' - '32.3' (= 3.1)$
	Valid decision with accurate figure	1	D	Yes AND (£)96.9(0) OR Yes AND (£)3.1(0) (spare)
Total marks for question		4		

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Question	Process	Mark	Mark Grid	Evidence
Q7	Process to find a missing length	1	A	$7 - 6.1 (= 0.9)$ OR $3.6 - 1.6 (= 2)$
	Process to find one relevant area	1 or	B	e.g. $3.6 \times 6.1 (= 21.96)$ or $1.6 \times 7 (= 11.2)$ or $1.6 \times '0.9' (= 1.44)$ or $'2' \times 6.1 (= 12.2)$ or $7 \times 3.6 (= 25.2)$ or $'2' \times '0.9' (= 1.8)$
	Full process to find total area or total paint needed	2	BC	e.g. $(3.6 \times 6.1) + (1.6 \times '0.9') (= 23.4)$ or $(1.6 \times 7) + ('2' \times 6.1) (= 23.4)$ or $(7 \times 3.6) - ('2' \times '0.9') (= 23.4)$ OR $'1.4' + '1.525' (= 2.925)$
	Process to work with proportion	1	D	e.g. $\{\text{Area}\} \div 8 (= 2.925)$ OR $\{\text{Area}\} \div 2.5 \div 8 (= 1.17)$ oe OR $'11.2' \div 8 (= 1.4)$ or $'12.2' \div 8 (= 1.525)$
	Accurate figure	1	E	2
Total marks for question		5		

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Question	Process	Mark	Mark Grid	Evidence
Q8	Begins to work with constraints	1 or	A	Draws a trapezium OR draws a line of 6cm OR a closed shape with one line of symmetry
	Draws a trapezium with one other constraint	2 or	AB	Draws a trapezium using a side of 6cm OR draws a trapezium with only one line of symmetry
	Fully correct diagram	3	ABC	Draws a trapezium and base of 6cm and only one line of symmetry NB Trapezium may be in any orientation
Total marks for question		3		

Question	Process	Mark	Mark Grid	Evidence
Q9	Begins to work with angles or proportion	1 or	A	e.g. $360 \div 72 (= 5)$ OR $75 \div 15 (= 5)$ OR $44 \div 72 (= 0.61..)$ or $13 \div 72 (= 0.18..)$ May be seen in subsequent calculations
	Process to find one angle or draw 1 angle correctly	2 or	AB	e.g. $'5' \times 44 (= 220)$ oe OR $13 \div 72 \times 360 (= 65)$ oe May be indicated by one accurately drawn angle
	Fully correct and labelled pie chart	3	ABC	220° and 65° and labelled correctly ($\pm 2^{\circ}$)
Total marks for question		3		

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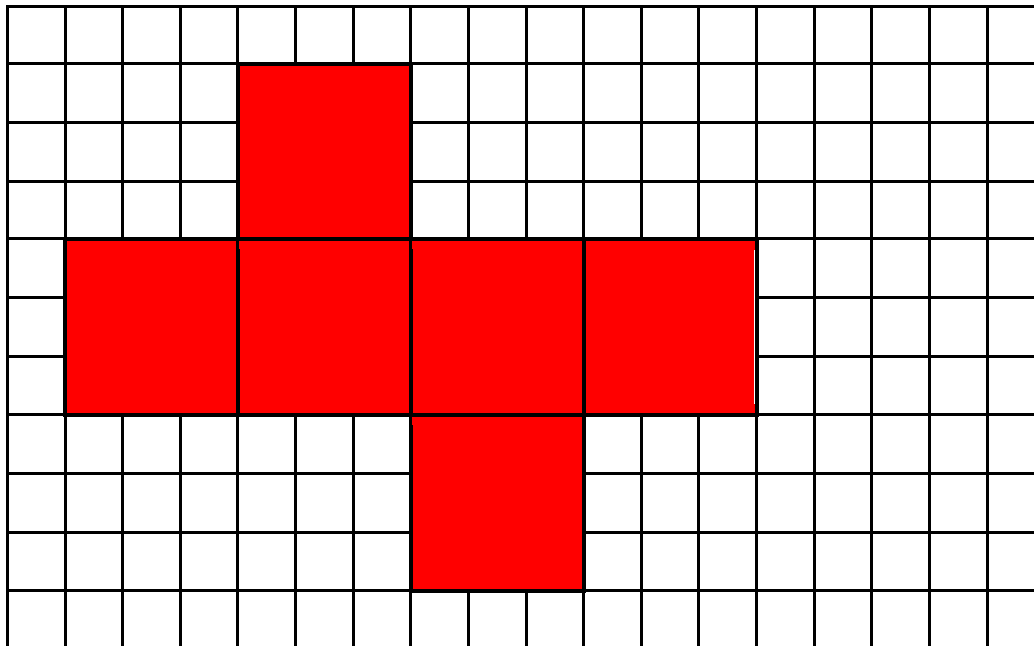
Question	Process	Mark	Mark Grid	Evidence
Q10(a)	Angle measured correctly as a bearing from north	1	A	110° allow ±2° tolerance
	Measures distance between point A and point B	1	B	6.5 (cm) allow ±2 mm tolerance oe May be implied by subsequent working
	Process to work with scale	1 or	C	{length} × 1000 (= 6500) oe Allow length from 6 to 7 cm
	Accurate figure from their measurement with units	2	CD	e.g. 6500 m or 6.5 km
Q10(b)	Process to work with range	1 or	E	53 – 26 (= 27) OR 53 – shortest time = 26 or 26 + shortest time = 53
	Accurate figure	2	EF	27
Total marks for question		6		

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Question	Process	Mark	Mark Grid	Evidence
Q11	Begins process to work with mean	1 or	A	e.g. $1.8(0) + 1.59 + 1.65 + 1.45 + 1.7(0) (= 8.19)$
	Full process to work with mean	2 or	AB	'8.19' $\div 5 (= 1.638)$
	Accurate figure	3	ABC	1.63 or 1.64
Total marks for question		3		

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Question	Process	Mark	Mark Grid	Evidence
Q12	Begins to draw a net			1 square face drawn of correct size (3cm by 3cm) NB ignore all other faces
	Develops solution	2 or	AB	6 faces of correct size drawn that don't fold into a correct net OR 5 faces of correct size that form an open cube OR Fully correct net of a cube of side length x where $x \neq 3$
	Correct net drawn	3	ABC	Fully correct net Do not accept any 3D representations
Total marks for question		3		



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Question	Process	Mark	Mark Grid	Evidence
Q13	Process to convert at least 1 time	1	A	e.g. $1\frac{1}{2} \times 60 (= 90)$ or $3\frac{1}{4} \times 60 (= 195)$ May be seen in subsequent working
	Begins to calculate with time	1 or	B	e.g. Adds at least 3 of '90', '80', '195', 45 OR subtracts at least 2 times from 4:30 OR adds at least 2 times to 9:15 OR 4:30 – 9:15 (=7 hrs 15 mins) oe
	Full process to find elapsed time and time available or start time or finish time	2 or	BC	e.g. '90' + '80' + '195' + 45 (=410) and 4:30 – 9:15 (= 435) oe OR 9:15 + '90' + '80' + '195' + 45 (= 4:05) OR 4:30 – ('90' + '80' + '195' + 45) (= 9:40)
	Valid decision with accurate figures	3	BCD	e.g. Yes AND 410 (mins) and 435 (mins) or OR Yes AND (he will finish by) 4:05 (pm) oe OR Yes AND (he can start at) 9:40 (am) oe OR Yes AND 25 (mins) (spare)
Total marks for question		4		

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Question	Process	Mark	Mark Grid	Evidence
Q14(a)	<p>Gives a probability using total number of seats or identifies the correct number of seats with a prize</p> <p>Accurate probability</p>	<p>1 or</p> <p>2</p>	<p>A</p> <p>AB</p>	<p>$\frac{a}{350}$ and $a < 350$ OR</p> <p>9 (seats) indicated</p> <p>$\frac{9}{350}$ oe</p> <p>ISW incorrect simplification of their fraction</p>
Q14(b)	Selects correct word to describe likelihood	1	C	Likely
Total marks for question		3		

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Question	Process	Mark	Mark Grid	Evidence
Q15(a)	Begins process to work with percentage	1 or	A	e.g. '298.98' \div 100 \times 20 (= 59.796) oe OR 110 \times 0.2 (= 22) or 49.99 \times 0.2 (= 9.998) or 2 \times 49.99 \times 0.2 (= 19.996) or 89 \times 0.2 (= 17.8) oe OR (100 + 20) \div 100 (= 1.2)
	Full process to work with percentage increase	2	AB	e.g. '298.98' \times '1.2' (= 358.776) oe OR 110 \times '1.2' (= 132) or 49.99 \times '1.2' (= 59.988) or 2 \times 49.99 \times '1.2' (= 119.976) or 89 \times '1.2' (= 106.8) oe
	Full process to find cost of the bill with or without VAT	1 or	C	110 + (2 \times 49.99) + 89 (=298.98) OR '132' + '119.976' + '106.8' (= 358.776) oe
	Accurate figure truncated or rounded to 2	2	CD	358.77 or 358.78
Q15(b)	Valid estimation check	1	E	e.g. 100 + 50 + 50 + 90 = 290 so my answer is sensible or 100 + 50 + 50 + 100 = 300 and my answer is just above or (100 + 50 + 50 + 100) \times 0.2 = 60 which is roughly what the VAT is so my answer is sensible
Total marks for question		5		