Pearson Edexcel

Functional Skills

Mathematics Level 1

Paper Based OnDemand Set 9

Mark Scheme

ALWAYS LEARNING

Pearson

Functional Skills qualifications from Pearson

Functional Skills qualifications from Pearson, the world's leading learning company. We provide a wide range of qualifications, including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications website at qualifications.pearson.com. Alternatively, you can get in touch with us using the details on our contact us page.

About Pearson

Pearson is the world's leading learning company, with 35,000 employees in more than 70 countries working to help people of all ages to make measurable progress in their lives through learning. We put the learner at the centre of everything we do, because wherever learning flourishes, so do people. Find out more about how we can help you and your learners at qualifications.pearson.com

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.

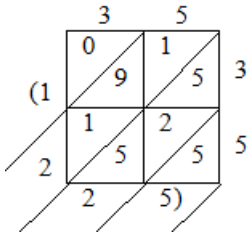
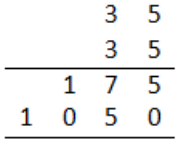
Applying the Mark Scheme

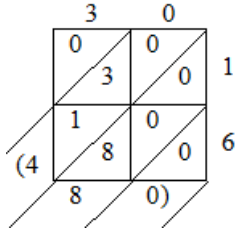
- The mark scheme has a column for **Process** and a column for **Evidence**. In most questions the majority of marks are awarded for the process the learner uses to reach an answer. The evidence column shows the *most likely* examples that will be seen. If the learner gives different evidence valid 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.

- **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 an appropriate range for the data used, and use consistent intervals. The scale used does not have to start at 0 and not all intervals must be labelled. The minimum requirements for labels will be given, but examiners should give credit if a title is given which makes the label obvious.

Section A (Non-Calculator)

PMAT1/N09				
Question	**Process**	**Mark**	**Mark Grid**	**Evidence**
Q1(a)	Process to square 35	1 or	A	35 × 35 (=1225) oe e.g.  or 
	Accurate figure	2	AB	1225
Q1(b)	Accurate figure	1	C	0.325
	Total marks for question	**3**		

Question	Process	Mark	Mark Grid	Evidence
Q2(a)	Accurate figure	1	A	1.60
Q2 (b)	Process to find cost of fuel or amount of fuel that can be bought	1 or	B	30 × '1.6' (= 48) oe  **OR** 40 ÷ '1.6' (= 25) 40 ÷ 30 (=1.33..)
	Valid decision with accurate figure	2	BC	No **AND** (£)48 **or** 4800(p) **OR** No **AND** 25 (litres) NB may work in pence throughout
	Total marks for question	**3**		

Question	Process	Mark	Mark Grid	Evidence
Q3(a)	Process to begin to work with percentage	1 or	A	80 ÷ 10 × 2 (=16) oe **OR** 300 ÷ 10 ÷ 2 (=15) oe **OR** 80 ÷ 10 (=8) **and** 300 ÷ 10 (=30)
	Full process to find figures to compare	2 or	AB	80 ÷ 10 × 2 (=16) oe **and** 300 ÷ 10 ÷ 2 (=15) oe
	Valid decision with accurate figures	3	ABC	Company A **AND** 16 **and** 15
Q3(b)	Valid check using a reverse calculation	1	D	e.g. 8 × 10 = 80
	Total marks for question	**4**		

Question	Process	Mark	Mark Grid	Evidence
Q4(a)	Writes figure in words	1	A	One thousand one hundred and ninety-five
Q4(b)	Rounds a number to a manageable figure	1	B	e.g. 1200 **or** 300 (or 400) May be seen in subsequent calculations
	Begins to work with fractions	1 or	C	e.g. '1200' ÷ 3 (=400) **OR** '300' × 3 (=900) **OR** '1200' ÷ '300' (=4) **OR** 1225.3 ÷ 3 (=408.43…) **OR** 295 × 3 (=885)
	Valid decision with accurate estimated figure from their working	2	CD	e.g. No / Yes **AND** 400 **OR** No **AND** 900 **OR** No **AND** 4 NB this question requires working shown
	Total marks for question	**4**		

Section B (Calculator)

PMAT1/C09				
Question	**Process**	**Mark**	**Mark Grid**	**Evidence**
Q1	Begins process to find mean	1 or	A	24.99 + 23.07 + 23.7 + 24.54 (= 96.3) **OR** 23.9 × 4 (=95.6)
	Full process to find figures to compare	2 or	AB	(24.99 + 23.07 + 23.7 + 24.54) ÷ 4 (=24.075) **OR** 24.99 + 23.07 + 23.7 + 24.54 (= 96.3) **and** 23.9 × 4 (=95.6)
	Valid decision with accurate figures	3	ABC	No **AND** 24(.075) **OR** No **AND** 96.3 **and** 95.6
	Total marks for question	**3**		

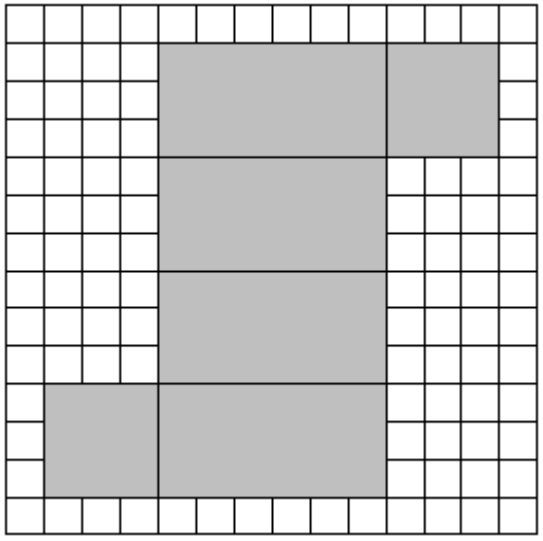
Question	Process	Mark	Mark Grid	Evidence
Q2	Process to find volume or amount of water needed	1 or	A	e.g. 0.9 × 0.9 × 0.4 (= 0.324) oe **OR** 8 × 45 (= 360) oe
	Develops solution	2 or	AB	e.g. '0.324' × 1000 (=324) **OR** '360' ÷ 1000 (=0.36) **OR** 0.9 × 0.9 × 0.4 (= 0.324) oe **and** 8 × 45 (= 360) oe **OR** '0.324' ÷ 45 (=0.0072) **OR** '0.324' ÷ 8 (=0.0405)
	Full process to find figures to compare	3 or	ABC	e.g. '324' ÷ 45 (=7.2) **OR** 0.9 × 0.9 × 0.4 (= 0.324) oe **and** '360' ÷ 1000 (=0.36) oe **OR** 0.9 × 0.9 × 0.4 × 1000 (=324) oe **and** 8 × 45 (= 360) oe **OR** '0.0072' × 1000 (=7.2) **OR** '0.0405' × 1000 (=40.5)
	Valid decision with accurate figure	4	ABCD	e.g. No **AND** 7.2 (cars) **OR** No **AND** 0.324 (m^3) **and** 0.36 (m^3) **OR** No **AND** 324 (litres) **and** 360 (litres) **OR** No **AND** 40.5 (litres)
Total marks for question		**4**		

Question	Process	Mark	Mark Grid	Evidence
Q3	Process to find the missing length	1	A	15 – 1.2 (=13.8) **OR** 9 – 1.2 (=7.8) **or** 9 – 1.2 – 1.2 (=6.6)
	Process to find one relevant area	1 or	B	e.g. 9 × 15 (=135) **OR** '13.8' × '6.6' (=91.08) **OR** 9 × 1.2 (=10.8) **OR** '13.8' × 1.2 (=16.56)
	Full process to find total area of path or gravel required for total path	2	BC	e.g. '135' – '91.08' (=43.92) oe **OR** '3.6' + '5.52' + '5.52' (=14.64) oe
	Process to find number of bags of gravel for total area or one relevant area	1 or	D	e.g. '43.92' ÷ 3 (=14.64) **OR** '10.8' ÷ 3 (=3.6)
	Accurate figure	2	DE	15 bags
Total marks for question		**5**		

Question	Process	Mark	Mark Grid	Evidence
Q4	Begins to work with percentage	1 or	A	599 ÷ 100 × 35 (= 209.65) oe **OR** (100 – 35) ÷ 100 (= 0.65) oe
	Full process to work with percentage decrease	2 or	AB	599 – '209.65' (= 389.35) oe **OR** 599 × '0.65' (= 389.35) oe
	Accurate figure	3	ABC	389.35
	Total marks for question	**3**		

Question	Process	Mark	Mark Grid	Evidence
Q5(a)	Process to find figures to compare	1 or	A	229000 – 190995 (= 38005) **OR** 190995 to 229000 **OR** 190995 + 35000 (=225995) **OR** 229000 – 35000 (=194000)
	Valid decision with accurate figure	2	AB	Yes **AND** (£) 38005 **OR** Yes **AND** (£) 225995 (**and** 229000) **OR** Yes **AND** (£) 194000 (**and** 190995)
Q5(b)	Valid check	1	C	e.g. 190995 + 38005 = 229000
	Total marks for question	**3**		

Question	Process	Mark	Mark Grid	Evidence
Q6(a)	Accurate figure	1	A	0.35
Q6(b)	Process to interpret scale	1	B	14 × 2.5 (= 35)
	Process to begin to work with the formula	1 or	C	{distance} ÷ 4 (= 8.75)
	Full process to work with formula	2	CD	{distance} ÷ 4 + 0.75 (= 9.5)
	Process to convert time or accurate figure not converted	1 or	E	e.g. '0.5' × 60 (= 30) **or** '9.5' × 60 (=570) **OR** 9.5 oe
	Accurate time	2	EF	9 (hrs) 30 (mins)
Total marks for question		**6**		

Question	Process	Mark	Mark Grid	Evidence
Q7	Begins to draw net	1 or	A	1 square face drawn 3cm by 3cm **OR** 1 rectangular face drawn 3 cm by 6 cm 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 cuboid **OR** fully correct net of a cuboid
	Accurate net drawn	3	ABC	Fully correct net 
	Total marks for question	**3**		

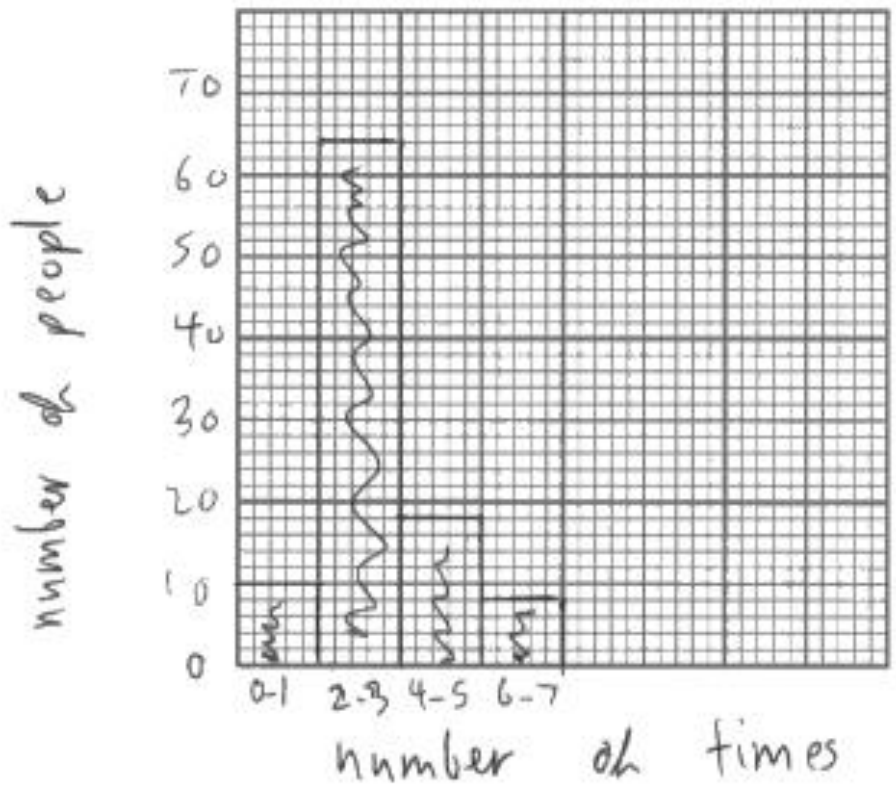
Question	Process	Mark	Mark Grid	Evidence
Q8(a)	Begins to work with probability	1 or	A	7 + 15 + 18 (=40) **OR** $\frac{7}{n}$ where $n > 7$
	Accurate figure	2	AB	$\frac{7}{40}$ oe
Q8(b)	Accurate answer	1	C	unlikely
	Total marks for question	**3**		

Question	Process	Mark	Mark Grid	Evidence
Q9(a)	Process to find perimeter	1 or	A	2.8 × 6 (=16.8)
	Accurate answer	2	AB	16.8
Q9(b)	1 line of symmetry drawn	1	C	At least 1 correct line drawn **and** no incorrect line drawn
Q9(c)	Correct angle selected	1	D	reflex
	Total marks for question	**4**		

Question	Process	Mark	Mark Grid	Evidence
Q10	Begins to draw graph or bar chart	1 or	A	One of: Linear scale Completes labels on horizontal and vertical axes Accurate plotting
	Develops graph or bar chart	2 or	AB	Two of: Linear scale Completes labels on horizontal and vertical axes Accurate plotting
	Fully correct graph or chart	3	ABC	All of: Suitable linear scale Completes labels on horizontal and vertical axes minimally acceptable labels (number of) people, (number of) times / exercise, 0-1, 2-3, 4-5, 6-7 Accurate plotting
	Total marks for question	**3**		

Example of a suitable graph for Question 10

Draw a suitable graph for Marlon.



Question	Process	Mark	Mark Grid	Evidence
Q11	Begins to work with ratio	1 or	A	120 ÷ (1 + 4) (=24) **OR** 16.75 × 4 + 23.99 (=90.99)
	Full process to work with ratio	2	AB	e.g. '24' × 4 (=96) **OR** 16.75 × 4 + 23.99 (=90.99) **and** 120 ÷ (1 + 4) (=24)
	Begins to work with cost	1 or	C	e.g. '24' × 23.99 (=575.76) **OR** '96' × 16.75 (=1608) **OR** 4 × 16.75 (=67) **OR** '24' × 16.75 (=402)
	Full process to find total cost	2 or	CD	'24' × 23.99 + '96' × 16.75 (=2183.76) oe **OR** '90.99' × '24' (=2183.76) **OR** '402' × 4 + '24' × 23.99 (=2183.76)
	Accurate figure	3	CDE	2183.76 NB this question requires working shown
	Total marks for question	**5**		