PEARSON EDEXCEL FUNCTIONAL SKILLS MATHEMATICS
MARK SCHEME – LEVEL 2 SET 5

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- If working **is crossed out and still legible**, then it should be marked, as long as it has not been replaced by alternative work.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

PEARSON EDEXCEL FUNCTIONAL SKILLS MATHEMATICS
MARK SCHEME – LEVEL 2 SET 5

- **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.

PEARSON EDEXCEL FUNCTIONAL SKILLS MATHEMATICS
MARK SCHEME – LEVEL 2 SET 5

Section A (Non-Calculator)

PMAT2/N05				
Question	**Process**	**Mark**	**Mark Grid**	**Evidence**
Q1	Process to begin to work with fractions	1 or	A	e.g. $\frac{2\times3}{5\times3}+\frac{1\times5}{3\times5}$ $(=\frac{11}{15})$ **OR** $1-\frac{2}{5}$ $(=\frac{3}{5})$ **OR** Attempt to use common denominator with at least one fraction correct
	Full process to work with fractions	2 or	AB	$1-\frac{11}{15}$ $(=\frac{4}{15})$ oe
	Accurate figure	3	ABC	$\frac{4}{15}$ oe
	Total marks for question	**3**		

Question	**Process**	**Mark**	**Mark Grid**	**Evidence**
Q2(a)	Process to begin to multiply decimals	1 or	A	e.g. 13.4 × 5.2 set out with correct place value seen **OR** 6968 seen with incorrect decimal point
	Accurate figure	2	AB	69.68
Q2(b)	Valid check using estimation	1	C	e.g. 13 × 5 = 65 **or** 5 × 15 =75 **or** 10 × 5 = 50
	Total marks for question	**3**		

PEARSON EDEXCEL FUNCTIONAL SKILLS MATHEMATICS
MARK SCHEME – LEVEL 2 SET 5

Question	Process	Mark	Mark Grid	Evidence
Q3(a)	Begins to complete the table	1 or	A	2 cells correct (see below for correct table)
	Fully correct table	2	AB	See below
Q3(b)	Begins process to find probability	1 or	C	(145 + 134) / 1000
	Accurate figure	2	CD	$\frac{279}{1000}$ oe
	Total marks for question	**4**		

Age (years)	spin	yoga	zumba	Total
18 to 24	**85**	92	145	322
25 to 49	107	**119**	134	**360**
50 and over	38	170	**110**	318
Total	230	381	389	**1000**

PEARSON EDEXCEL FUNCTIONAL SKILLS MATHEMATICS
MARK SCHEME – LEVEL 2 SET 5

Question	Process	Mark	Mark Grid	Evidence
Q4	Begins to interpret scale diagram	1	A	e.g. 8 (cm) **and** 7 (cm) **and either** 12 (cm) **or** 5 (cm)
	Begins to engage with scale	1	B	e.g. '8' × 0.5 (=4) **or** '7' × 0.5 (=3.5) **or** '12' × 0.5 (=6) **or** '5' × 0.5 (=2.5) **OR** '76' × 0.5 × 0.5 (=19) **or** '152' × 0.5 × 0.5 (=38)
	Begins to calculate area with or without scale	1 or	C	e.g. '4' × '3.5' (=14) **or** '4' × '2.5' (=10) **or** '4' × '6' (=24) **or** '8' × '7' (=56) **or** '8' × '5' (=40)
	Full process to find area of trapezium with or without scale	2	CD	e.g. '4' × '3.5' + ('4' × '2.5') ÷ 2 (=19) **or** '4' × '6' – ('4' × '2.5') ÷ 2 (=19) **OR** ('12' + '7') ÷ 2 × 8 (=76)
	Full process to find figures to compare	1 or	E	e.g. {area} × 2 (=38) **OR** 40 ÷ 2 (=20)
	Valid decision and accurate figures	2	EF	e.g. No **AND** 38 **OR** No **AND** 19 **and** 20 NB tolerance on initial measurements of 2 mm ft for final accuracy mark
	Total marks for question	**6**		

PEARSON EDEXCEL FUNCTIONAL SKILLS MATHEMATICS
MARK SCHEME – LEVEL 2 SET 5

Section B (Calculator)

PMAT2/C05				
Question	**Process**	**Mark**	**Mark Grid**	**Evidence**
Q1(a)	Process to find the median	1 or	A	e.g. 0, 8, 8, 8, 10, 13, 14, 15, 15, 16 **and** (10 + 13) ÷ 2 (=11.5) Ordering can be implied by correct process
	Accurate figure	2	AB	11.5
Q1(b)	Accurate figure	1	C	8
	Total marks for question	**3**		

Question	**Process**	**Mark**	**Mark Grid**	**Evidence**
Q2	Begins to work with total amount of money	1 or	A	15 × 27 (=405)
	Full process to find cost of prize	2 or	AB	'405' ÷ 18 (=22.5)
	Accurate figure	3	ABC	22.50
	Total marks for question	**3**		

PEARSON EDEXCEL FUNCTIONAL SKILLS MATHEMATICS
MARK SCHEME – LEVEL 2 SET 5

Question	Process	Mark	Mark Grid	Evidence
Q3(a)	Begins to draw scatter graph	1 or	A	One of: linear scales plotting (at least 4 correct) labels
	Develops solution	2 or	AB	Two of: linear scales plotting (at least 4 correct) labels
	Accurate diagram	3	ABC	All of: linear scales that cover data range plotting (allow 1 error or omission) labels Minimum Labels to include (number of) People, (number of) TVs or appropriately detailed title
Q3(b)	Accurate description	1	D	Positive correlation **or** descriptive statement – e.g. 'as the number of people in a household increases so does the number of TVs watched.'
	Total marks for question	**4**		

PEARSON EDEXCEL FUNCTIONAL SKILLS MATHEMATICS
MARK SCHEME – LEVEL 2 SET 5

Question	Process	Mark	Mark Grid	Evidence
Q4	Begins process to work out first year interest	1 or	A	2500 × (100 +1.7) ÷ 100 (=2542.5) oe **OR** '1.017'^{3}
	Full process to find compound interest	2 or	AB	2500 × '1.017'^{3} (=2629.67..) oe
	Accurate answer	3	ABC	2629.67 **or** 2629.68
	Total marks for question	**3**		

PEARSON EDEXCEL FUNCTIONAL SKILLS MATHEMATICS
MARK SCHEME – LEVEL 2 SET 5

Question	Process	Mark	Mark Grid	Evidence
Q5(a)	Evaluates expression to calculate diameter or substitutes $y = 11$	1	A	3×11 (=33) **OR** $3 \times \pi \times 11$ (=33 π) **OR** $3 \times \pi \times 11 \times 11$ (=363 π)
	Process to find circumference of circle	1 or	B	$\pi \times$ '33' (=103.67..) oe **OR** $3\pi y$
	Full process to find area of curved surface before or after substitution	2 or	BC	$\pi \times$ '33' $\times$ 11 (=1140.39..) oe **OR** $3\pi y^2$
	Accurate figure	3	BCD	1140(.39..) **or** 1139(.82) **or** 363π Accept use of 3.14 or better for π
Q5(b)	Correct selection	1	E	280 + 150 + 450 + 150
	Total marks for question	**5**		

PEARSON EDEXCEL FUNCTIONAL SKILLS MATHEMATICS
MARK SCHEME – LEVEL 2 SET 5

Question	Process	Mark	Mark Grid	Evidence
Q6(a)	Accurate figure	1	A	$\frac{9}{20}$
Q6(b)	Begins process to calculate using BIDMAS	1 or	B	5 + 13 × 13 (=174)
	Accurate figure	2	BC	116
	Total marks for question	**3**		

Question	Process	Mark	Mark Grid	Evidence
Q7(a)	Begin to work with ratio	1 or	A	800 ÷ 5 (=160) **or** 550 ÷ 3 (=183.33..)
	Full process to find amount of sugar required	2 or	AB	'160' × 2 (=320) **and** 550 ÷ 3 (=183.33..) **or** '160' × 3 (=480)
	Accurate figure with supportive working	3	ABC	320 **AND** 183(.33..) **or** 480
Q7(b)	Valid check using reverse calculation	1	D	e.g. 320 ÷ 2 =160
	Total marks for question	**4**		

PEARSON EDEXCEL FUNCTIONAL SKILLS MATHEMATICS
MARK SCHEME – LEVEL 2 SET 5

Question	Process	Mark	Mark Grid	Evidence
Q8	Works with cost of one offer	1 or	A	e.g. (7.75 × 2) × '52' (=806) **OR** 44 × 12 + 30 (=558) condone (7.75 × 2) × '4' × 12 (=744)?
	Works with costs of both offers	2 or	AB	(7.75 × 2) × '52' (=806) **AND** 44 × 12 + 30 (=558)
	Accurate figures to compare	3	ABC	806 **AND** 558
	Begins process to work with percentage saving	1 or	D	e.g. {total for A} – {total for B} **or** '806' – '558' (=248) **or** '774' – '558' (=216) **OR** '806' × 28 ÷ 100 (=225.68) **or** (100 – 28) ÷ 100 (=0.72)
	Process to find percentage saving	2 or	DE	e.g. {their difference} ÷ {their fitness classes cost} × 100 **or** '248' ÷ '806' × 100 (=30.7..) **or** '216' ÷ '774' × 100 (=27.9..) **OR** '806' × (100 – 28) ÷ 100 (=580.32) oe **OR** '774' × '0.72' (=557.28) oe
	Valid decision from accurate figures	3	DEF	e.g. Yes **AND** 30.7(69..)**OR** Yes **AND** (£) 580.32 **and** (£) 558 Could work in costs per week throughout – add at pre std if seen
	Total marks for question	**6**		

PEARSON EDEXCEL FUNCTIONAL SKILLS MATHEMATICS
MARK SCHEME – LEVEL 2 SET 5

Question	Process	Mark	Mark Grid	Evidence
Q9(a)	Correct coordinates	1	A	(– 7, –4)
Q9(b)	Process to engage with symmetry	1 or	B	Plots a point on the line y=1
	Accurate shape and plotting	2	BC	Pentagon drawn with a point on y=1 (labelling not necessary)
	Total marks for question	**3**		

Question	Process	Mark	Mark Grid	Evidence
Q10	Begins process to find percentage increase	1 or	A	e.g. 748 – 550 (=198)
	Full process to find percentage increase	2 or	AB	e.g. (748 – 550) ÷ 550 × 100 (=36)
	Accurate figure	3	ABC	36
	Total marks for question	**3**		

PEARSON EDEXCEL FUNCTIONAL SKILLS MATHEMATICS
MARK SCHEME – LEVEL 2 SET 5

Question	Process	Mark	Mark Grid	Evidence
Q11(a)	Process to convert weight	1	A	e.g. 29 ÷ 2.2 (=13.18..) **or** 12 × 2.2 (=26.4)
	Process to work with daily feed	1 or	B	24 ÷ {daily feed for their weight of dog} (=18)
	Accurate figure	2	BC	18
Q11(b)	Process to convert length	1 or	D	78 ÷ 3.28 (=23.780..)
	Accurate functional figure	2	DE	23.78 **or** 23.8 **or** 24
	Total marks for question	**5**		

PEARSON EDEXCEL FUNCTIONAL SKILLS MATHEMATICS
MARK SCHEME – LEVEL 2 SET 5

Question	Process	Mark	Mark Grid	Evidence
Q12	Begins process to find mean	1 or	A	e.g. 2 of 211 × 4 **or** 214 × 32 **or** 217 × 53 **or** 220 × 11 **OR** 2 of 844 **or** 6848 **or** 11501 **or** 2420 seen Allow use of 'midpoints' provided they are consistent and within an interval including the end points
	Full process to find estimate for mean	2	AB	(211 × 4 + 214 × 32 + 217 × 53 + 220 × 11) ÷ (4 + 32 + 53 + 11) (=216.13) (condone 1 error) Allow use of 'midpoints' provided they are consistent and within an interval including the end points
	Begins to work with formula	1 or	C	15 ÷ 2 (=7.5) **OR** {value for r}^{3} (=421.875)
	Works fully with formula	2 or	CD	(4 × π × '7.5'^{3}) ÷ 3 (=1767.14..)
	Full process to find mean volume of steel used per day	3 or	CDE	'216(.13)' × '1767.14..' (=381933.23..)
	Accurate figure supported by working	4	CDEF	382 000
	Total marks for question	**6**		

Number of spheres	Frequency	mp	f×mp
210 to 212	4	211	844
213 to 215	32	214	6848
216 to 218	53	217	11501
219 to 221	11	220	2420
totals	100		21613

PEARSON EDEXCEL FUNCTIONAL SKILLS MATHEMATICS
MARK SCHEME – LEVEL 2 SET 5