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LEVEL 1 & 2 EXAMS

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TQUK Functional Skills Qualification in Maths at Level 2

Mark Scheme (Past Paper 8)

Mark scheme information

This mark scheme is intended to support the valid and consistent marking of the examination paper identified above. This mark scheme includes:

- the total mark available for each question or sub question
- the individual subject content coverage and mapping of each question or sub-question as well as coverage totals
- the marking process and considerations which could or should be followed
- the types of responses expected for each mark.

Information for the Marker:

- this mark scheme documents covers both Section A (Non-Calculator) and Section B (Calculator)
- all marking must be completed consistently and the mark scheme must be applied fairly
- markers should award full marks if the candidate deserves full marks
- working is always expected, and space is provided for candidates to show their working
- questions where marks are awarded for working will always state 'show your working' or similar statement
- markers should be prepared to award zero marks if the candidate's response is not worthy of credit according to the requirements of the mark scheme for that question
- for paper-based assessment, individual marks awarded to the candidate should be annotated clearly on the candidate's script. Once calculated and checked, overall marks achieved by the candidate must be included in the relevant area of the examination front cover.

PASS MARK: 34

Glossary

Marking Term	Definition
ACO	Accept only the correct answer
FOL	Follow-through marks are applied when there are earlier mistakes in the method
UNIT	The unit must be included in final answer for the mark(s) to be given
ALL	Identifies that all separate points must be met in order to receive full marks
NUM	Confirms that only the number is required, not the specific unit, type or measure
OE	Or equivalent
Coverage Term	Definition
UN	Use of number and the number system
UCM	Use of common measures, shape and space
HID	Handle information and data
PS	The ability to apply mathematical thinking effectively to solve problems
UPS	The ability to do maths when not as part of a problem

Section A: Non-Calculator

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
1	1	1	3.067	ACO	UPS	UN10i
2	1	1	12.58	ACO	UPS	UN10ii
3	2	2	7.5 (miles)	**Award full marks if correct answer given**	UPS	
		1	$12 \div 1.6$	OE method		UCM14i
		1	7.5 (miles)	ACO		UCM14i
4	2	2	$\frac{14}{103}$	**Award full marks if correct answer given**	UPS	
		1	$\frac{112}{824}$	OE fraction or probability e.g. 0.13(592…) or 13.5(922…)(%)		HID27
		1	$\frac{14}{103}$	FOL their fraction correctly written in its simplest form if their fraction can be simplified and only if the first mark not awarded		HID27

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
5	2	2	No AND 1 307 847 (tickets) OR No AND 615 307 (tickets) OR No AND 876	**Award full marks if correct answer and correct reason given**	PS	
		1	1 307 847 OR 615 307 OR 876 846	ACO 615 307 from 1 400 000 – 784 693 876 846 from 1 400 000 – 523 154 Calculations with numbers above one million are not expected at Level 2 but award if seen		UN2i
		1	No AND 1 307 847 (tickets) OR No AND 615 307 (tickets) OR No AND 876 846 (tickets)	Accept No AND any correct reason FOL their 1 307 847 correctly compared with 1 400 000 or Their 615 307 correctly compared with 523 154 or Their 876 846 correctly compared with 784 693		UN1
6	2	2	(£)300	**Award full marks if correct answer given**	UPS	
		1	240 ÷ 0.8	OE method		UN6b
		1	(£)300	ACO		UN6b

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
7	2	2	$14\frac{9}{20}$	**Award full marks if correct answer given**	UPS	
			Alternative method 1			
		1	$(8)\frac{5}{20}$ (+) $(6)\frac{4}{20}$ or $\frac{9}{20}$	Finds a common denominator OE fraction		UN7ii
		1	$14\frac{9}{20}$	ACO OE mixed number		UN7ii
			Alternative method 2			
		1	$\frac{165}{20}$ (+) $\frac{124}{20}$ or $\frac{289}{20}$	Finds a common denominator OE fraction		UN7ii
		1	$14\frac{9}{20}$	ACO OE mixed number		UN7ii

8	3	3	965 (grams)	**Award full marks if correct answer given**	PS	
		1	e.g. $19.3 = \frac{m}{50}$ OR e.g. m = d × v	OE method to substitute values into formula OR Correctly rearranges formula in terms of mass		UCM15ii
		1	19.3 × 50	OE method Implies 1st mark		UCM15ii
		1	965 (grams)	ACO		UCM15ii

Total: 15 marks

Section B: Calculator

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
9	1	1	Prism	ACO	UPS	UCM20
10	1	1	(-5, 3)	ACO	UPS	UCM19
11	2	2	Blue AND 11(.111…)(%) OR Blue AND 0.11(111…) and 0.12 OR Blue AND $\frac{25}{225}$ and $\frac{27}{225}$	**Award full marks if correct answer given**	PS	
		1	11(.111…)(%) OR 0.11(111…) and 0.12 OR $\frac{25}{225}$ and $\frac{27}{225}$	OE method e.g. may find 12% and $\frac{1}{9}$ of an integer OE fractions which allow a direct comparison		UN4
		1	Blue AND 11(.111…)(%) OR Blue AND 0.11(111…) and 0.12 OR Blue AND $\frac{25}{225}$ and $\frac{27}{225}$	Accept Blue and any correct reason OE fractions which allow a direct comparison		UN4

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
12	2	1	16 or 20 or 36 seen OR 12 or 3 seen	ACO Shows an understanding of BIDMAS 3 must come from 15 – 12 = 3	UPS	UN12
		1	12	ACO At least one other number from first mark needs to be seen in addition to 12 for both marks to be awarded		UN12
13	2	2	25(%)	**Award full marks if correct answer given**	UPS	
		1	(1 – 0.8) ÷ 0.8 or 0.25	OE method		UN6a
		1	25(%)	ACO		UN6a
14	2	2	Yes AND 9 days	**Award full marks if correct answer and correct reason given**	PS	
		1	3 × 6 ÷ 2 or 9 days	OE method		UN11iii
		1	Yes AND 9 days	Accept Yes AND any correct reason		UN11iii

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
15	3	3	0.72 AND 72(%)	**Award full marks if correct answer given**	PS	
		1	$\frac{36}{50}$	ACO OE fraction or probability e.g. 36 out of 50		HID26
		1	0.72 or 72(%)	FOL their fraction correctly converted to a decimal or a percentage		HID27
		1	0.72 AND 72(%)	FOL their fraction correctly converted to a decimal or a percentage If one or zero scored, then award one mark special case if their decimal and percentage match each other		HID27

16	3	3	No AND 4.5 (kph) OR No AND 14 (km) OR No AND 214(.285…) (mins) OR No AND 0.075 (kpm) AND 0.07 (kpm)	**Award full marks if correct answer given**	PS	
		1	15 ÷ 200 or 0.075 (kilometres per min) OR 4.2 ÷ 60 or 0.07 (kilometres per min)	OE method Accept e.g. 200 ÷ 60 or 3.3(333…) (hours) although not expected at Level 2		UCM15i
		1	15 ÷ 200 × 60 OR Their 0.075 × 60 OR 4.2 ÷ 60 × 200 OR	OE method Accept 15 ÷ (200 ÷ 60)		UCM15i

			Their 0.07 × 200 OR 15 ÷ (4.2 ÷ 60) OR 15 ÷ their 0.07 OR 15 ÷ 200 AND 4.2 ÷ 60			
		1	No AND 4.5 (kph) OR No AND 14 (km) OR No AND 214(.285…) (mins) OR No AND 0.075 (kpm) AND 0.07 (kpm)	Accept No AND any correct reason		UCM15i

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
17	3	1	3	ACO May be seen or implied in subsequent working e.g. 81 × 6	PS	UN2ii
		1	4 × their 3 × 9^2 ÷ 2 OR 81 × 6	OE method to substitute their 3 into the formula Accept use of: 3.1, 3.14, 3.142 or 3.1416 for their 3		UN3ii
		1	486 (cm^2)	ACO		UCM17ii
18	3	3	No AND correct reason E.g. No AND 120 (more small cups) OR No AND 10 (cups per part) AND 9 (cups per part) OR No AND 180 (cups in total)	**Award full marks if correct answer and correct reason given**	PS	
		1	200 ÷ (14 + 4 + 2) or 10 (cups per part) OR 108 ÷ 12 or 9 (cup per part)	OE method to apply ratio		UN11i
		1	200 ÷ (14 + 4 + 2) × 14 or 140 (small cups) AND 200 ÷ (14 + 4 + 2) × 2 or 20 (large cups) OR 200 ÷ (14 + 4 + 2) AND 108 ÷ 12 OR 10 (cup per part) AND 9 (cups per part) OR 9 × 20 or 180 (cups in total)	OE method to find comparable figures Award if 120 (more small cups) seen		UN11i
		1	No AND correct reason	Accept No AND any correct reason		UN11i

			E.g. No AND 120 (more small cups) OR No AND 10 (cups per part) AND 9 (cups per part) OR No AND 180 (cups in total)			

19	4	1	0.95 + 0.95 + 0.82 + 1.16 or 3.88 (m)	OE method to work out perimeter	PS	UCM16ii
		1	Their 3.88 × 0.14 OR Their 3.88 × 1.14 OR 4.5 × 0.14 OR 4.5 × 0.86	OE method to work out percentage or percentage increase FOL their 3.88 from correct method for perimeter		UN5i
		1	0.5432 or 4.4232 OR 0.63 or 3.87	ACO 0.5432 OR 4.4232 Implies first 2 marks		UN5i
		1	Yes AND correct reason E.g. Yes AND 4.4(232) (m) OR Yes AND 3.88 (m) AND 3.87 (m) OR Yes AND 0.5(432) (m) AND 0.6(3) (m)	Accept Yes AND any correct reason FOL correct comparison using their values if their comparison relies on a decimal comparison For example: 4 < their 4.4(232) < 5 then correctly compared with 4.5		UN9

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
20	4	1	36 OR 34	At least one correct mean	PS	HID25
		1	38 OR 40	At least one correct median		HID25
		1	36 AND 34 AND 38 AND 40	ACO All 4 values correct		HID25
		1	Correct comment e.g. If they use mean, then Deepal is correct AND If they use median, then Billie is correct	Accept any correct comment relating to both mean and median		HID25
21	4	4	£108.55	**Award full marks if correct answer given**	PS	
		1	5000×1.04^2	OE method to work out compound interest Award if 200 and 208 seen OR 5200 and 208 seen		UCM13
		1	(£)5408	ACO Implies 1st mark		UCM13
		1	(9750 – their 5408) ÷ 40	OE method to work out monthly payments FOL their 5408		UCM13
		1	£108.55	FOL the correct answer to (9750 – their 5408) ÷ 40 if their final answer is written in correct money format (e.g. 2dp if pence given)		UCM13

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
22	5	5	6 (fish)	**Award full marks if correct answer given**	PS	
		1	3.14 × 3 × 3 × 1.1	OE method to work out volume		UCM17i
		1	31.086 (m^3)	ACO Implies 1st mark		UCM17i
		1	Their 31.086 × 220 ÷ 1000 OR Their 31 × 220 ÷ 1000	OE method to substitute their volume into the formula Allow if they have rounded their volume down to nearest whole number Award if 7 fish seen for this mark only		UN3i
		1	6.8(3892) OR 6.8(2)	FOL the correct answer to 31.086 × 220 ÷ 1000 6.8 implies first 3 marks		UN3i
		1	6 (fish)	FOL their 6.8(3892) or their 6.8(2) correctly rounded down to the nearest whole number		UN9

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
23	6	1	$\frac{(22+25)23}{2}$ OR (22 + 25) × 23 ÷ 2	OE method to substitute dimensions into formula	PS	UN3ii
		1	540.5 (m^2)	ACO Area Implies 1st mark		UCM16i
		1	Their 540.5 ÷ 2.6 or 207(.884…) people	OE method FOL their 540.5 from correctly substituting values into formula		UN11ii
		1	(£)35	ACO Median		HID23i
		1	Their 207 × their 35	OE method FOL their 207 after a division by 2.6 and rounding down to the nearest whole number FOL their 35 if in the range [20, 50]		UN9
		1	(£)7245	FOL the correct answer to their 207 × their 35 if their 207 comes from rounding their 207(.884…) down to the nearest whole number FOL their 35 if in the range [20, 50]		UCM15iii

Total: 45 marks

Mapping Matrix

Totals	UN	UCM	HID	PS	UPS	SC
Section A	8	5	2	5	10	N/A
Section B	22	15	8	39	6	N/A
Total (%)	50%	33%	17%	73%	27%	22/28

Ofqual Mapping Requirements

	UN	UCM	HID	PS	UPS	SC
Total (%)	45-55%	30-45%	10-20%	73-77%	23-27%	As many as possible

End of Mark Scheme

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