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TQUK Functional Skills Qualification in Maths at Level 2

Mark Scheme (Past Paper 2)

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

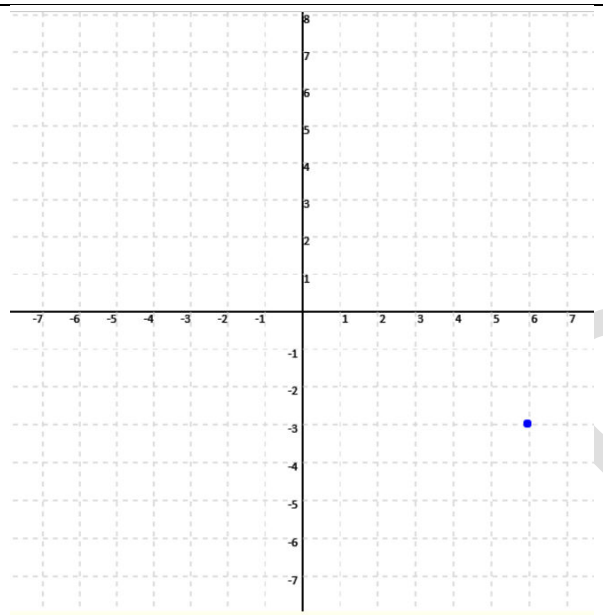
Marking Term	Definition
ACO	Accept only the correct answer
FOL	Follow-through marks are applied when there are earlier mistakes in the method
UNIT	The unit must be included in final answer for the mark(s) to be given
ALL	Identifies that all separate points must be met in order to receive full marks
NUM	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	8.858	ACO	UPS	UN10i
2	1	1	6.027	ACO	UPS	UN10ii
3	2	2	0.48	**Award full marks if correct answer seen**	UPS	
		1	$\frac{24}{50}$	OE fraction or probability for example 48% or 24 out of 50		HID26
		1	0.48	FOL their fraction correctly converted to a decimal if 0 < their fraction < 1		HID27
4	2	2	4 (g/cm^3)	**Award full marks if correct answer seen**	UPS	UCM15ii
		1	1800 ÷ 450	OE method		
		1	4 (g/cm^3)	ACO Ignore any units		
5	2	2	No AND 1 180 213	**Award full marks if correct answer and correct reason seen**	PS	
		1	568 750 + 128 528 + 482 935 or 1 180 213 OR 697 278 OR 1 051 685 OR 611 463	OE method OR Correctly adds at least 2 of the given values together. For info: 568 750 + 128 528 = 697 278 568 750 + 482 935 = 1 051 685 128 528 + 482 935 = 611 463		UN2i
		1	No AND 1 180 213	ACO		UN1

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
6	2	2	18.28	**Award full marks if correct answer seen**	UPS	UN10i
		1	(1.324 + 2.206 =) 3.53 OR (1.324 + 14.75 =) 16.044 OR (2.206 + 14.75 =) 16.956	ACO Correctly adds two decimals		
		1	18.28	ACO		
7	2	2	$\frac{77}{60}$	**Award full marks if correct answer seen**	UPS	UN7i
		1	$\frac{9}{60}$ (+) $\frac{68}{60}$ or $1\frac{17}{60}$	Finds a common denominator OE fraction		
		1	$\frac{77}{60}$	ACO OE improper fraction		
8	3	3	(£)28 114	**Award full marks if correct answer seen**	PS	UCM13
		1	32 000 – 12 570 or 19 430	OE method		
		1	32 000 – (19 430 × 0.2) OR 32 000 – 3886	OE method		
		1	(£)28 114	ACO		
Total: 15 marks						

Section B: Calculator

Q	Marks in Total	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
1	1	1	Thirteen billion	ACO Accept any recognisable spelling	UPS	UN1
2	1	1		ACO Mark intention	UPS	UCM19
3	2	2	No AND $\frac{6}{8}$	**Award full marks if correct answer and correct reason seen**	PS	
		1	$\frac{42}{56}$ or $\frac{3}{4}$ or $\frac{6}{8}$	OE fraction Accept for example $\frac{7}{8}$ would be 49		UN8
		1	No AND $\frac{6}{8}$	Accept **No** AND any correct reason for example No AND $\frac{7}{8}$ would be 49		

Q	Marks in Total	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
4	2	2	0.4	**Award full marks if correct answer seen**	UPS	UN12
		1	15 or 40 or 100 seen	ACO Shows an understanding of BIDMAS		
		1	0.4	ACO		

5	2	2	47.9(885…)(%) or 48(%)	**Award full marks if correct answer seen**	UPS	UN6a
		1	(5150 – 3480) ÷ 3480 (× 100)	OE method		
		1	47.9(885…)(%) or 48(%)	ACO		

6	2	2	No AND 8.25 (km)	**Award full marks if correct answer and correct reason seen**	PS	
		1	11 × 75 000 or 825 000 (cm)	OE method		UCM18i
		1	No AND 8.25 (km)	Accept **No** AND Any correct reason		

7	3	1	0.1	ACO ALL	PS	UN2ii
		1	Their 0.1 ÷ 2 × 100	OE method Accept use of 0.13, 0.14 or 0.135 ALL		UN5ii
		1	5(%)	Accept 6.5(%) from use of 0.13. Accept 7(%) from use of 0.14 only if first mark not awarded ALL		UN5ii

Q	Marks in Total	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
8	3	3	No AND 18.2(748) (m) OR No AND 5.89(171…) (m) OR No AND 3.17(869…)	**Award full marks if correct answer and correct reason seen**	PS	
		1	3.14 × 5.82 OR 18.5 ÷ 3.14 OR 18.5 ÷ 5.82	OE method to work out circumference or apply reverse process		UCM16ii
		1	18.2(748) (m) OR 5.89(171…) (m) OR 3.17(869…)	ACO Implies 1st mark Accept any correct rounding or truncating		UCM16ii
		1	No AND 18.2(748) (m) OR No AND 5.89(171…) (m) OR No AND 3.17(869…)	Accept **No** AND any correct reason. FOL their 18.2(748) (m) correctly compared with 18.5 if 18 < their 18.2(748) < 19 FOL their 5.89(171…) (m) correctly compared with 5.82 if 5 < their 5.89(171…) < 6 FOL their 3.17(869…) correctly compared with 3.14 if 3 < their 3.17(869…) < 4 Accept any correct rounding or truncating.		UN9

Q	Marks in Total	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
9	3	3	(£)5488.75	**Award full marks if correct answer seen**	PS	UCM13
		1	$12\,500 \times 1.03^2$	OE method to work out compound interest Award if 375, 12 875 and 386.25 seen		
		1	(£)13 261.25	ACO Implies 1st mark		
		1	(£)5488.75	FOL the correct answer to 18 750 – their 13 261.25 if final answer given using correct money format i.e. 2dp if pence given		

10	3	3	9:25 (am)	**Award full marks if correct answer seen**	PS	UCM15i
		1	15 ÷ 12 (× 60)	OE method		
		1	1.25 hours or 75 mins or 1 hour 15 mins	ACO OE time format Implies 1st mark		
		1	9:25 (am)	ACO		

Q	Marks in Total	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
11	4	4	(Strawberry) 30 (cm^3) AND (Vanilla) 45 (cm^3)	**Award full marks if correct answer seen**	PS	
		1	$2.5 \times 2.5 \times 12$	OE method to substitute values into formula		UN3ii
		1	75	ACO Implies 1st mark		UCM17i
		1	Their $75 \div 5 \times 2$ or 30 (cm^3) OR Their $75 \div 5 \times 3$ or 45 (cm^3)	OE method to apply ratio FOL their 75 30 or 45 implies first 2 marks Award this mark if values in wrong boxes		UN11i
		1	(Strawberry) 30 (cm^3) AND (Vanilla) 45 (cm^3)	ACO Answers must be in correct order		UN11i

12	4	4	766 (stickers)	**Award full marks if correct answer seen**	PS	
		1	$2[(160 \times 56) + (160 \times 72) + (72 \times 56)]$ OR 2(8960 + 11 520 + 4032)	OE method to work out surface area of chest		UCM17ii
		1	49 024 (cm^2)	ACO Implies 1st mark		UCM17ii
		1	Their $49\,024 \div (8 \times 8)$ OR Their $49\,024 \div 64$	OE method to substitute their surface area into the formula. Their surface area must come from an attempt to find the total area of at least 3 faces **Do not accept** use of volume for example $56 \times 160 \times 72$ or use of 645 120		UN3i
		1	766 (stickers)	ACO		UN3i

Q	Marks in Total	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
13	4	4	(£)42 (per hour)	**Award full marks if correct answer seen**	PS	HID24
		1	25 AND 35 AND 45 AND 55	ACO Correct midpoints identified		
		1	$(25 \times 2) + (35 \times 6) + (45 \times 8) + (55 \times 4)$ OR 50 + 210 + 360 + 220 or 840	Allow consistent use of upper or lower bounds multiplied by the frequency Allow one error in midpoints, upper bounds or lower bounds		
		1	Their 840 ÷ 20	FT their 840 from correct method Allow consistent use of upper of lower bounds multiplied by the frequency divided by 20 Allow one error in midpoints, upper bounds or lower bounds. Do not allow 20 ÷ 4		
		1	(£)42 (per hour)	ACO		

Q	Marks in Total	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
14	5	1	$0.5 \times 7.54 \times 2.8$ or 10.556 (m^2)	OE method to work out area of triangle	PS	UCM16i
		1	$(0.5 \times 7.54 \times 2.8) + (3 \times 7.54)$ OR $10.556 + (3 \times 7.54)$ OR $10.556 + 22.62$	OE method to work out total area Accept use of intermediate rounding for 10.556 if rounded up		UCM16i
		1	33.176 (m^2)	ACO		UCM16i
		1	Their $33.176 \div 6.5$ or 5(.104) (tins)	FOL their 33.176 from correct method for partial or total area Accept use of intermediate rounding in area calculation if values rounded up Accept use of their 33.176 correctly rounded up		UN11ii
		1	6 (tins)	FOL their 5.104 correctly rounded up to the nearest whole number from a minimum of 1dp seen		UN9

Q	Marks in Total	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
15	6	6	(£)40.50 or (£)40.51 or (£)40.52	**Award full marks if correct answer seen**	PS	
			Alternative Method 1: Conversion, Total then percentage			
		1	(£)0.75	ACO Median		HID23i
		1	164 × 0.305	OE method		UCM14i
		1	50.02 (m) or 50 (m)	ACO Implies 2nd mark		UCM14i
		1	Their 50 × their 0.75 or (£)37.5(0) OR Their 50.02 × their 0.75 or (£)37.515 or (£)37.51 or (£)37.52	OE method FOL their 50 or their 50.02 from either 164 × 0.305 or 164 ÷ 0.305 FOL their 0.75 if 0.50 ≤ their 0.75 ≤ 1.99 (£)37.5(0) or (£)37.515 Implies the first 3 marks		UCM15i ii
		1	Their 37.5 × 0.08 or (£)3 OR Their 37.5 × 1.08 or (£)40.5(0) OR Their 37.515 × 0.08 or (£)3(.0012) OR Their 37.515 ×1.08 or (£)40.51(62)	FOL their 37.5 or their 37.515 from their length in metres × their median Accept any correct rounding of their 37.515		UN5i
		1	(£)40.50 or (£)40.51 or (£)40.52	FOL the correct answer to either: 50 × their 0.75 if 0.50 ≤ their 0.75 ≤ 1.99. OR Their 50 × 0.75 if their 50 comes from 15.25 ÷ 0.305 AND then increased by 8% Final answer must be written using correct money notation such as 2dp if pence given		UN5i
			Alternative Method 2: Conversion, percentage then total			
		1	(£)0.75	ACO Median		HID23i
		1	164 × 0.305	OE method		UCM14i
		1	50.02 (m) or 50 (m)	ACO Implies 2nd mark		UCM14i
		1	Their 50 × 0.08 or 4 (m)	OE method		UN5i

			OR Their 50 × 1.08 or 54 (m) OR Their 50.02 × 0.08 or 4(.0016) (m) OR Their 50.02 × 1.08 or 54.(0216) (m)	FOL their 50 or either 50.02 from either 164 ×0.305 or 164 ÷ 0.305 4 (m) or 4(.0016) (m) or 54 (m) or 54(.0216) (m) implies the first 3 marks		
		1	Their 54(m) × their 0.75 or (£)40.5(0) OR Their 54(.0216) × their 0.75 or (£)40.51(62)	FOL their 54 from their length in metres correctly increased by 8%. FOL their 0.75 if 0.50 ≤ their 0.75 ≤ 1.99		UCM15iii
		1	(£)40.50 or (£)40.51 or (£)40.52	FOL the correct answer to either: 54 × their 0.75 if 0.50 ≤ their 0.75 ≤ 1.99 OR Their 54 × 0.75 if their 54 comes from 15.25 ÷ 0.305 AND then increased by 8% Final answer must be written using correct money notation such as 2dp if pence given		UN5i
			Alternative Method 3: Percentage, conversion, then total			
		1	(£)0.75	ACO Median		HID23i
		1	164 × 0.08 or 13.12 OR 164 × 1.08 or 177.12	OE method		UN5i
		1	Their 177.12 × 0.305	OE method		UCM14i
		1	54(.0216)	FOL the correct answer to their 177.12 × 0.305		UCM14i
		1	Their 54(m) × their 0.75 or (£)40.5(0) OR Their 54(.0216) × their 0.75 or (£)40.51(62)	FOL their 54 from either 177.12 × 0.305 or 177.12 ÷ 0.305 FOL their 0.75 if 0.50 ≤ their 0.75 ≤ 1.99		UCM15iii
		1	(£)40.50 or (£)40.51 or (£)40.52	FOL the correct answer to either: 54 × their 0.75 if 0.50 ≤ their 0.75 ≤ 1.99 OR Their 54 × 0.75 if their 50 comes from 177.12 ÷ 0.305		UN5i

				Final answer must be written using correct money notation such as 2dp if pence given		

Total: 45 marks

Mapping Matrix

Totals	UN	UCM	HID	PS	UPS	SC
Section A	8	5	2	5	10	N/A
Section B	20	20	5	39	6	N/A
Total (%)	47%	42%	12%	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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