

TQUK Functional Skills Qualification in Maths at Level 2

Mark Scheme (Sample Assessment Paper 1)

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 subquestion 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

- The pass mark for this paper is 35 marks.
- 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.

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

SAMPLE Section A: Non-Calculator

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
1	1	1	14.007	ACO	UPS	UN10ii
	•					
2	1	1	$\frac{1}{5}$	ACO	UPS	UN8
	_					
3	1	1	Three million, eight hundred and six thousand, two hundred and sixty-five	Do not penalise for spelling mistakes	UPS	UN1
4	1	1	0.077 0.701 0.707 0.72 0.77	ACO	UPS	UN9
5	2	1	435.50 × 0.02 or 8.71 OR 435.50 × 1.02	OE method to work out percentage or total amount after percentage increase	UPS	UCM13
		1	(£)444.21	ACO		UCM13
6	3	1	$\frac{10}{15}$ AND $\frac{3}{15}$	OE Finds a common denominator		UN7i
		1	$1 - \left(\frac{10}{15} + \frac{3}{15}\right)$	OE method	PS	UN7i
		1	$\frac{2}{15}$	ACO OE Fraction		UN7i

5	notai Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
7	3	1	154 ÷ 3.5 OR 40 × 3.5 OR 154 ÷ 40	OE method		UCM15i
		1	44 (mph) OR 140 (miles) OR 3.85 (hours)	ACO		UCM15i
		1	Yes AND correct reason for example Yes AND 44 (mph) OR Yes AND 140 (miles in 3.5 hours) OR Yes AND 3.85 (hours) and 3.5 (hours)	Accept Yes AND any correct reason	PS	UCM15i

8	3	1	2 AND 5 AND 8	Correct midpoints identified Allow one error in midpoints		HID24
		1	$(2 \times 16 + 5 \times 5 + 8 \times 9) \div 30$	Method for estimating the mean Allow one error in midpoints	UPS	HID24
		1	4.3	ACO		HID24

Total: 15 marks

Section B: Calculator

Q	Marks in Total	Marks	Answer	Further Considerations/Comments	PS/UPS	SC
1	1	1		ACO mark intention Award 1 mark for correct shape only, regardless of position on the 1 cm grid	UPS	UCM21
			5			
2	1	1	В	ACO	UPS	UCM19
_						
3	1	1	-102 498 -82 548 1 024 812 1 200 956 1 204 812	ACO	UPS	UN1
		-				1
4	2	1	8.5 or 4	ACO	UPS	UN12
1		1	2.125	ACO		UN12

Q	Marks in	Marks	Answer	Further Considerations/Comments	PS/UPS	SC
	Total					
5	2	1	2 × 3.14 × 21.5	OE method for working out circumference		UCM16i
				Do not award if $3.14 \times 21.5^2 = 3.14 \times 21.5 \times 2$		i
				seen		
		1	135.02 (m)	ACO	043	UCM16i
				Do not award if $3.14 \times 21.5^2 = 3.14 \times 21.5 \times 2$		i
				seen		

6	2	1	<u>(343 980 – 51 597)</u> 343 980 ×100	OE method to work out percentage	PS	UN5ii
		1	85(%)	ACO		UN5ii

7	2	1	12.5(%) OR $\frac{25}{200}$ and $\frac{36}{200}$ OR 0.125 and 0.18	OE fractions which allow a direct comparison Allow working out $\frac{1}{8}$ and 18% of the same value	PS	UN4
		1	(Fridge) B AND 12.5(%) OR (Fridge) B AND $\frac{25}{200}$ and $\frac{36}{200}$ OR (Fridge) B AND 0.125 and 0.18	Accept (Fridge) B AND any correct reason	5	UN4

Q	Marks in	Marks	Answer	Further Considerations/Comments	PS/UPS	SC
	Total					
8	3	1	23 059	OE probability		
			492 787	for example 23 059 out of 492 787		HID26
				or 0.04(679)		
		1	their _ ^{23 059} × 100	OE method to convert their probability into a	PS	
			492 787	percentage		ΠΙΔΖΟ
		1	4.6(793)(%)	ACO – Accept any correct rounding or		
				truncating		

9	4	1	23 000 AND 37 000 AND 49 000 AND 40 000	ACO all 4 rounded values seen or implied by 149 000		UN2ii
		1	Their 149 000 × 0.12 or 17 880 OR Their 149 000 × 1.12 OR 148 497 × 0.12 or 17 819.64 OR 148 497 × 1.12	FOL their rounded values May be seen in stages Accept use of actual values for 2 nd and 3 rd mark only	PS	UN5i
		1	(£)166 880 or (£)166 316.64	ACO		UN5i
		1	Yes AND (£)166 880	Accept Yes AND any correct reason Decision must be based on (£)166 880 from rounding the values and not using the actual values		UN2ii

Q	Marks in Total	Marks	Answer	Further Considerations/Comments	PS/UPS	SC
10	4	1	3.14 × 28.6 ² × 85.1	OE method to find volume of the cylinder		UCM17i
		1	218 570(.3634) (cm ³)	ACO Accept any correct rounding or truncating		UCM17i
		1	Their 218 570 ÷ 1000 ÷ 4.5 or 48(.571) (gallons)	OE method to find number of gallons		UCM14i
		1	No and 48(.571) (gallons)	OE No and correct reason Accept any correct rounding or truncating		UCM14i

11	4	1	2799 × 0.08 or 223.92 OR 2799 × 0.92	OE Method for calculating discounted or total price after discount		UCM13
		1	(£)2575.08	ACO		UCM13
		1	Their 2,575.08 × 1.04 ² or 2785.2065	OE Method for calculating compound interest FOL their 2575.08 after percentage decreased	PS	UCM13
		1	(£)2785 or (£)2785.20 or (£)2785.21 or (£)2786	FOL the correct answer using correct money notation to Their 2,575.08 × 1.04 ² For example either whole number or 2dp		UCM13

12 4 1 (Rope A mean) 3262 or 3262.25 1 (Rope A range) 621 1 1 Valid comment regarding claim i for example Accept Yes and any correct reason Yes and A has a higher mean 1 1 Valid comment regarding claim i for example Accept No AND any correct reason relating to	
1 (Rope A range) 621 1 Valid comment regarding claim i for example Accept Yes and any correct reason Yes and A has a higher mean PS 1 Valid comment regarding claim ii Accept Yes and any correct reason PS	HID25
1 Valid comment regarding claim i for example Accept Yes and any correct reason Yes and A has a higher mean PS 1 Valid comment regarding claim ii Accept Yes and any correct reason	HID25
1 Valid commont regarding claim ii Accont No AND any correct reason relating to	HID25
for example consistency or spread	HID25

13	5	1	65.8 ÷ 7 or 9.4	OE method to start working with ratio		UN11i
		1	9.4 × 5 or 47 (m ² of blue paint) OR 9.4 × 2 or 18.8 (m ² of yellow paint)	OE method to work out how much of one colour paint is needed		UN11i
		1	47 (m ² of blue paint) AND 18.8 (m ² of yellow paint)	ACO for the amount of paint required for both colours		UN11i
		1	Their 47 ÷ 12 or 3.9(1666) or 4 (tins of blue paint) OR Their 18.8 ÷ 12 or 1.5(666) or 2 (tins of yellow paint)	OE method for working out how many tins of paint are required for one colour	PS	UN11i
		1	4 (tins of blue paint) AND 2 (tins of yellow paint)	ACO		UN11i

Q	Marks in Total	Marks Answer Further Considerations/Comments Total Further Considerations/Comments		PS/UPS	SC		
14	5		Alternative Method 1: Area of Triangle				
		1	1456 ÷ (4 × 7) or (£)52 (per	OE method to work out cost per square metre		L INI 1 1 ii	
			square metre)				
		1	0.5 × 8.5 × 3 or 12.75(m ²)	OE method to work out area of triangle	-	UCM16i	
		1	0.5 × 8.5 × 3 + 8.5 × 8 or 80.75 (m ²) OR Their 12.75 + 8.5 × 8 or 80.75 (m ²)	OE method to work out total area		UCM16i	
		1	Their 52 × their 80.75	OE method to work out total cost. FOL their 52 from correct method for proportion and their 80.75 from an attempt to work out total area		UCM15iii	
		1	(£)4199	ACO		UCM15iii	
	Alternative Method 2: Area of Trapezium (Not expected at Level 2 but awarded if seen)				PS		
		1	1456 ÷ (4 × 7) or (£)52 (per square metre)	OE method to work out cost per square metre		UN11ii	
		1	0.5 × (8 + 11) × 4.25 or 40.375	OE method to work out the area of one trapezium	•	UCM16i	
		1	Their 40.375 × 2 or 80.75	OE method to work out total area FOL their 40.375 from correct method for area of trapezium		UCM16i	
		1	Their 52 × their 80.75	OE method to work out total cost. FOL their 52 from correct method for proportion and their 80.75 from an attempt to work out total area		UCM15iii	
		1	(£)4199	ACO		UCM15iii	
		<u> </u>			I		

Q	Marks in Total	Marks	Answer	Further Considerations/Comments	PS/UPS	SC
15	5	1	$\frac{(6+9)4.825}{2}$	OE method to find area of the garden		UCM16i
		1	36.1875(m ²)	ACO for area	1	UCM16i
		1	(£)19.99	ACO for mode		HID23ii
		1	Their 36.1875× their 19.99 or 723.38(8125) OR 800 ÷ 19.99 or 40(.02)(m ²) OR 800 ÷ 36.1875 or (£)22.10(708)	OE method to work out the total cost of artificial grass Their 19.99 must be in the range [4.99, 34.99] Accept 36 × their 19.99 or 37 × their 19.99 Accept any correct rounding or truncating of their 36.1875	PS	UN11ii
		1	No AND correct reason for example No AND (£)723 or (£)723.38 or (£)723.39 or (£)724 OR No AND 36(.1875)(m ²) AND 40(.02)(m ²) OR No AND (£)19.99 AND (£)22(.10) or (£)22(.11)	Accept No AND any correct reason Accept No AND (£)719 or (£)719.64 or (£)720 from use of 36 × 19.99 Accept No AND (£)739 or (£)739.63 or (£)740 from use of 37 ×19.99		UN11ii

Mapping Matrix

Totals	UN	UCM	HID	PS	UPS	SC
Total (%)	45%	37%	18%	73%	27%	23/28

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