

TQUK Functional Skills Qualification in Maths at Level 2

Mark Scheme (Sample Assessment 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 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 36 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

Section A: Non-Calculator

			Considerations/Comments		00
1 1	1	1.022	ACO	UPS	UN10i
2 1	1	8.82	ACO	UPS	UN10ii
3 2	2	18 (mph)	Award full marks if correct		
	-		answer seen		
	1	3 ÷ 10 (× 60) or 0.3	OE method		UCM1
		OR		UPS	5i
	4		100		
	1	18 (mpn)	ACO		
					IC
4 2	1	86	ACO		
	•	$\frac{33}{100}$	OF fraction		UN4
		100	ALL		0
	1	86%	ACO		
			ALL	UPS	
			If zero scored, then award one-mark		LIN4
			special case if their fraction and		0.11
			their percentage match each other		

Q	Total	Marks	Answer/Examples	Further	PS/UPS	SC
	Marks			Considerations/Comments		
5	2	2	(£)23.60	Award full marks if correct		
				answer seen		
		1	20 × 0.18 or 3.6	OE method		
			OR		PS	UN5i
			20 × 1.18 or 23.6			
		1	(£)23.60	ACO		
				Must be 2dp		UNDI

6	2	2	4625	Award full marks if correct answer seen		
		1	2500, 3000, 4250, 5000 OR 6600, 5500, 5000, 4250 OR (4250 + 5000) ÷ 2 OR 9250 ÷ 2	OE method to work out median	UPS	HID23i
		1	4625	ACO		HID23i

7	2	2	125 000 cm OR 1.25 km OR 1250 metres	Award full marks if correct answer seen		
		1	2.5 × 50 000	OE method	UPS	UCM18i
		1	125 000 cm OR 1.25 km	ACO		
				UNIT		UCM18i
				OE correct distance with correct unit		

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
8	3	3	1	Award full marks if correct		
-		-	1 _ 8	answer seen		
		1	$6 - 3\frac{5}{8}$ or $2\frac{3}{8}$ or $\frac{19}{8}$	OE method or fraction Accept use of decimals or percentages		
			OR			
			$3\frac{5}{8} + \frac{10}{8}$ or $4\frac{7}{8}$ or $\frac{39}{8}$			UN7ii
			OR			
			6 × 8 or 48 AND 3 × 8 + 5 or 29			
		1	$2\frac{3}{8} - 1\frac{2}{8}$ OR $\frac{19}{8} - \frac{10}{8} \text{ or } \frac{9}{8}$ OR $6 - 4\frac{7}{8} \text{OR}$	OE method or fraction Accept use of decimals or percentages	PS	UN7ii
			$\frac{48}{8} - \frac{39}{8}$			
			OR			
			48 – 29 – 10 or 9			
		1	$1\frac{1}{8}$	ACO		UN7ii
Tota	al: 15 mai	ŕks				

Section B: Calculator

Q	Total	Marks	Answer/Examples	Further	PS/UPS	SC
	Marks			Considerations/Comments		
1	1	1	-865	ACO		
			-820			LINIA
			-814		042	UNI
			-811			
2	1	1	50 (inches)	ACO	UPS	UCM14i
3	1	1	137.7	ACO	UPS	UN12
4	1	1	(-5, 3)	ACO	UPS	UCM19
5	2	2	40(°)	Award full marks if correct answer		
				seen		
		1	360 - 120 - 120 - 80	OE method	013	UCM22i
		1	40(°)	ACO		UCM22i

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
6	3	3	Yes AND 4.3(332)(m)	Award full marks if correct answer		
				seen		
		1	3.14 × 1.38	OE method		UCM16ii
		1	4.3(332)	ACO		
				Implies 1 st mark	PS	
		1	Yes AND 4.3(332) (m)	Accept Yes AND Any correct reason.		
				FOL their 4.3(332) correctly		UN9
				compared with 4.5 if $4 < \text{their } 4.3(332)$		0.10
				< 5		

7	3	3	No AND 71.5 (m ²)	Award full marks if correct answer		
			OR	given		
			No AND 12 (litres)			
		1	91 ÷ 14 or 6.5 (m ² per litre)	OE method		UN11ii
		1	91 ÷ 14 × 11	OE method		
			OR		DC	
			78 ÷ (91 ÷ 14)		FO	UN11ii
			OR			
			78 ÷ 6.5			
		1	No AND 71.5 (m ²)	ACO		
			OR	Accept No AND Any correct reason.		UN11ii
			No AND 12 (litres)			

8	3	3	Greenland AND –10 (°C)	Award full marks if correct answer given		
		1	$\frac{5(14-32)}{9}$	OE method to substitute 24 into formula	DO	UN3ii
		1	-10 (°C)	ACO	P5	UN3ii
		1	Greenland AND –10 (°C)	Accept Greenland AND Any correct reason FOL their –10 if their –10 < 0		UN1

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
9	3	3	(£)384	Award full marks if correct answer seen		
		1	33.6(0) ÷ 1.05	OE method		UN6b
		1	32	ACO Implies 1 st mark	PS	UN6b
		1	(£)384	FOL the correct answer to their 32 × 12		UCM15iii
		•	•			

10	4	4	No AND 89.6	Award full marks if correct answer		
				seen		
		1	20 AND 60 AND 100 AND 140	ACO Correct midpoints identified		HID24
		1	(20 × 7) + (60 × 34) + (100 × 100) +	Allow consistent use of upper of lower		
			(140 × 9)	bounds multiplied by the frequency		
			OR	Allow one error in midpoints, upper		HID24
			140 + 2040 + 10 000 + 1260 or	bounds or lower bounds		
			13 440		DC	
		1	Their 13 440 ÷ 150 or 89.6	FT their 13 440 from correct method	гJ	
				Allow consistent use of upper of lower		
				bounds multiplied by the frequency		
				divided by 150		HID24
				Allow one error in midpoints, upper		
				bounds or lower bounds		
				Do not allow 150 ÷ 4		
		1	No AND 89.6	Accept No AND Any correct reason		HID24

Q	Total Marks	Marks	Answer/Ex	amples	Further Considerations/Comments	PS/UPS	SC
11	4	4	A	ward full marks f	or fully correct table		
		1	80 ÷ (5 + 3 + 2) or 8		OE method		UN11i
		1	5 × their 8 or 40		OE method		
			OR		FOL their 8 from correct method for		
			3 × their 8 or 24		ratio		UN11i
			OR 2 x thoir 8 or 16				
		1			ACO values do not need to be in	-	
		I		een	correct position in table	DO	UN11i
		1	Fully correct table		ACO	- 75	
			Activity	Number of Students			
			Swimming	40			
			Rock climbing	24			UNTI
			Go karting	16			
			Total	80			

Q	Total	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
12	4	4	No AND (£)1 009 176(.75)	Award full marks if correct answer seen		
		1	975 050	ACO May be seen or implied by subsequent working or correct answer		UN1
		1	Their 975 050 × 0.035 OR Their 975 050 × 1.035	OE method FOL their 975 050 if their 975 050 contains just the figures 9750	PS	UN5i
		1	34 126.75 OR 1 009 176.75	FOL the correct answer to their 975 050 × 0.035 or their 975 050 × 1.035		UN5i
		1	No AND (£)1 009 176(.75)	FOL their 1 009 176.75 correctly compared with 1 010 000		UN11ii
					·	

13	4	1	34	ALL ACO Mean		HID25
		1	18	ALL ACO Range		HID25
		1	Yes AND correct reason eg mean score for week 2 is higher AND 34 seen	ALL OE comment comparing means. FOL their 34 if their 34 is in the range [22, 40]	PS	HID25
		1	No AND correct reason eg range for week 2 is higher AND 18 seen	ALL OE comment comparing ranges. FOL their 18 if their 18 is a result of subtracting two numbers from the table		HID25

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
14	5	5	13 (tins)	Award full marks if correct		
				answer seen		
		1	3.14 × 3 × 3 (× 2) or 28.26 or 56.52	OE method to find the area of one or both circles		UCM17ii
		1	3.14 × 3 × 3 × 2 + 2 × 3.14 × 3 × 12	OE method to work out total surface		
			OR	area		
			2 × 28.26 + 2 × 3.14 × 3 × 12			
			OR			UCM17ii
			56.52 + 2 × 3.14 × 3 × 12		DC	
			OR		F3	
			56.52 + 226.08			
		1	282.6 (cm ²)	ACO		
				Implies first 2 marks		
		1	Their 282.6 × 50 ÷ 1150 or	OE method		L INI 1 11
			12(.2869)	FOL their 282.6		UNTII
		1	13 (tins)	FOL their 12(.2869) correctly		
				rounded up to the nearest whole		UN9
				number		

Q	Total	Marks	Answer/Examples	Further	PS/UPS	SC
	Marks			Considerations/Comments		
15	6		Alternative Method	1: Area of Triangle		
		1	0.5 × 2.47 × 4.18 or 5.1623	OE method to work out area of triangle		UCM16i
				truncating of 5.1623		
		1	0.5 × 2.47 × 4.18 + 5.65 × 4.18 OR 5.1623 + 5.65 × 4.18	OE method to work out total area		UCM16i
			5.1623 + 23.617			
		1	28(.7793) (m)	ACO Accept any correct rounding or truncating		UCM16i
		1	(6)5(00)	ACO Modo		
		1	Their 29 \times their 5	OF method		HID23II
				FOL their 29 and their 5 Their 29 must be their 28(.7793)	PS	UN9
				whole number Their 5 must be in the range [3.8, 6]		
		1	(£)145	FOL the correct answer to their 29 × their 5 Their 29 must be their 28(.7793)		
				correctly rounded up to the nearest whole number Their 5 must be in the range [3.8, 6] If pence given in the answer, it must		UCM15iii
				be 2dp		
			Alternative Method 2: Are	ea ot Trapezium		
		1	101 expected at Level 2 b 0.5 \times (8.12 \pm 5.65) or 6.885	OF method to start to use the		
			OB	formula for area of trapezium		
			(8.12 + 5.65) × 4.18 or 57.5586	Accept any correct rounding or truncating of 6.885 or 57.5586		UCM16i

1	0.5 × (8.12 + 5.65) × 4.18	OE method for the full formula for area of trapezium	UCM16i
1	28(.7793)	ACO Accept any correct rounding or truncating Implies first 2 marks	UCM16i
1	(£)5(.00)	ACO Mode	HID23ii
1	Their 29 × their 5	OE method FOL their 29 and their 5 Their 29 must be their 28(.7793) correctly rounded up to the nearest whole number Their 5 must be in the range [3.8, 6]	UN9
1	(£)145	FOL the correct answer to their 29 × their 5 Their 29 must be their 28(.7793) correctly rounded up to the nearest whole number Their 5 must be in the range [3.8, 6]. If pence given in the answer, it must be 2dp	UCM15iii

Total: 45 marks

Mapping Matrix

Totals	UN	UCM	HID	PS	UPS	SC
Section A	9	4	2	5	10	N/A
Section B	21	15	9	39	6	N/A
Total (%)	50%	32%	18%	73.3%	26.7%	20/28

Ofqual Mapping Requirements

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

End of Mark Scheme