

TQUK Functional Skills

Qualification in Maths at Level 1

Mark Scheme (Paper 3)

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: 35

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 the 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	620 000	ACO	UPS	UN3c
2	1	1	36	ACO	UPS	UN6a
3	1	1	1.3	ACO	UPS	UN3a
4	1	1	14 200	ACO	UPS	UN2
5	1	1	$\frac{8}{20}$	ACO OE fraction	UPS	HID31
6	2	2	32 km	Award full marks if correct answer seen	UPS	UCM21
		1	$24 \div 6 \times 8$ or 32	OE method		
		1	32 km	ACO Accept equivalent distances e.g. 32 000 metres UNIT		
7	2	1	for example $\frac{6}{12}, \frac{10}{12}, \frac{8}{12}$ and $\frac{9}{12}$ OR Correctly ordered but from highest to lowest. OR 3 fractions in correct order when one is covered up.	Finds a common denominator OE fraction Accept for example 0.5, 0.83..., 0.66..., 0.75	UPS	UN8b
		1	$1\frac{1}{2}, 1\frac{2}{3}, 1\frac{3}{4}, 1\frac{5}{6}$	ACO Accept fraction written in any format		

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
8	2	2	(£)1260	Award full marks if correct answer seen	PS	UCM18
		1	1200 × 0.05 or 60 OR 1200 × 1.05	OE method		
		1	(£)1260	ACO		

9	4	4	No AND 2.7 (miles) OR No AND 13.5 (miles) AND 13.25 (miles)	Award full marks if correct answer and correct reason seen	PS	
		1	13.5	ACO sum of 5 values		UN11a
		1	(2.86 + 3.5 + 2.6 + 2.74 + 1.8) ÷ 5 OR 13.5 ÷ 5 OR 2.65 × 5	OE method Award if brackets omitted		HID29a
		1	2.7 (miles) OR 13.25 (miles)	FOL the correct answer to their 13.5 ÷ 5 if their 13.5 is not a multiple of 5 13.25 is ACO 2.7 implies first 2 marks 13.25 implies 2 nd mark		UN11b
		1	No AND 2.7 (miles) OR No AND 13.5 (miles) AND 13.25 (miles)	Accept No AND Any correct reason FOL the correct decision using their 2.7 if 2 < their 2.7 < 3 FOL the correct decision using their 13.5 and their 13.25 if the comparison relies on a decimal comparison i.e. 13 < their values < 14		UN10

Total: 15 marks

Section B: Calculator

Q	Marks in Total	Marks	Answer	Further Considerations/Comments	PS/UPS	SC										
1	1	1	45(°)	ACO	UPS	UCM26a										
2	1	1	8800	ACO	UPS	HID29b										
3	2	2	All 3 frequencies and total correct	Award full marks if all 3 frequencies and total correct	UPS	HID28a										
		1	Any 2 frequencies correct OR Frequencies total 15	Do not accept tallies without frequency values												
		1	All 3 frequencies and total correct	Do not accept tallies without frequency values												
		<table><tr><th>Group</th><th>Frequency</th></tr><tr><td>1 – 20</td><td>4</td></tr><tr><td>21 – 40</td><td>9</td></tr><tr><td>41 – 60</td><td>2</td></tr><tr><td>Total</td><td>15</td></tr></table>					Group	Frequency	1 – 20	4	21 – 40	9	41 – 60	2	Total	15
Group	Frequency															
1 – 20	4															
21 – 40	9															
41 – 60	2															
Total	15															
4	2	2	405	Award full marks if correct answer seen	PS	UN4										
		1	45 × 9	OE method												
		1	405	ACO												

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
5	2	1	$\frac{1}{3}$	ACO OE fraction ALL	UPS	UN15a
		1	240	ACO ALL		

6	3	3	(Offer) A AND (£)554.75 AND £554.8(0)	Award full marks if correct answer and correct reason seen	PS	
		1	634 ÷ 8 or 79.25 OR 634 ÷ 8 × 7 or 554.75	OE method		UN9
		1	138.7 × 4 or 554.8	OE method		UN17b
		1	(Offer) A AND (£)554.75 AND £554.8(0)	Accept (Offer) A AND any correct reason		UN10

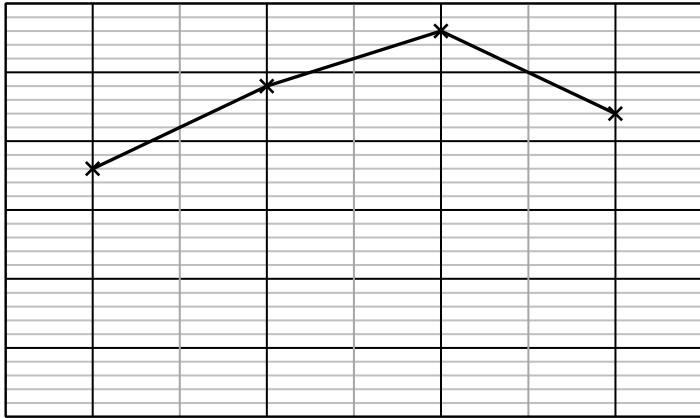
7	3	1	(£)3050	ACO May be seen or implied in subsequent working Award if answer of (£)610 seen	PS	UN1
		1	Their 3050 ÷ 5	Accept use of 350, 3000, 3005 or 3500		UN17a
		1	(£)610	Accept (£)70 from 350 ÷ 5 (£)600 from 3000 ÷ 5 (£)601 from 3005 ÷ 5 (£)700 from 3500 ÷ 5		UN17a

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
8	3	3	40.63 (miles per gallon)	Award full marks if correct answer seen	PS	
		1	32.5 × 1.25 OR 32.5 × 0.25 or 8.125	OE method		UN14bi
		1	40.625 (miles per gallon)	ACO Allow any correct rounding or truncating for this mark Implies 1 st mark		UN14bi
		1	40.63 (miles per gallon)	FOL their 40.625 correctly rounded to 2dp Unrounded number must be seen to award FOL mark		UN12c
9	3	3	No and 7200 (grams) OR No and 7.2 (kg) and 7 (kg)	Award full marks if correct answer and correct reason seen	PS	
		1	5450 (grams) or 0.95 (kg) or 0.8 (kg) or 1.75 (kg) OR 7 (kg)	At least one correct conversion 1.75 from 0.95 + 0.8		UCM20b
		1	7.2 (kg) or 7200 (grams)	ACO Correct total Implies 1 st mark		
		1	No and 7200 (grams) OR No and 7.2 (kg) and 7 (kg)	OE No AND correct reason with comparable figures		

Q	Marks in Total	Marks	Answer	Further Considerations/Comments	PS/UPS	SC
10	3	3	Lion AND correct reason for example Lion AND 16.5 (kg) AND 14.4 (kg)	Award full marks if correct answer and correct reason seen	PS	
		1	110 × 0.15 OR 72 × 0.2	OE method to work out 15% or 20%		UN14a
		1	16.5 (kg) OR 14.4 (kg)	ACO Implies 1 st mark		UN14a
		1	Lion AND correct reason for example Lion AND 16.5 (kg) AND 14.4 (kg)	Accept Lion AND any correct reason FOL the correct conclusion based on their 16.5 and their 14.4 from correct method for percentage only if 2 nd mark not awarded		UN13

Q	Marks in Total	Marks	Answer	Further Considerations/Comments	PS/UPS	SC
11	3	1	0.75 (hours) OR 0.25 (hours) OR 15 (mins) OR $\frac{3}{4}$ (hour) OR 60 (mins) OR 1 (hour) OR 11:20 – 10:35 = 45 (mins) OR 10:50 (am) OR 11:15 (am)	OE one correct time conversion For info: 10.35 am + 0.25 hours = 10:50 am 11:20 am – 0.25 hours = 11:15 am	PS	UCM20e
		1	1 (hour) and 0.75 (hours) OR 60 (mins) and 45 (mins) OR 11:35 (am) OR 10:20 (am)	Any comparable total correct times in consistent units OR Correct arrival time or leaving time		
		1	No AND 1 (hour) and 0.75 (hours) OR No AND 60 (mins) and 45 (mins) OR No AND 11:35 (am) OR No AND 10:20 (am)	Accept No AND any comparable units of time or correct reason		

Q	Marks in Total	Marks	Answer	Further Considerations/Comments	PS/UPS	SC
12	4	1	2.5×8.16	OE method	PS	UCM22a
		1	20.4 (m ²)	ACO		UCM22a
		1	$(2.5 \times 8.16) \div 6$ or 3.4 OR Their $20.4 \div 6$ or 3.4	OE method FOL their 20.4		UN17b
		1	4 (tins)	FOL their 3.4 correctly rounded up to the nearest whole number		UN12a

Q	Marks in Total	Marks	Answer	Further Considerations/Comments	PS/UPS	SC								
13	4	1	Linear scale starting at zero on y axis	Scale must start at zero and go up to at least 28 Zero may be implied by their scale	PS	HID27e								
		1	Both axes labelled	For example (Temperature) °C and Mon, Tues, Wed, Thurs										
		1	At least 2 points plotted correctly	Allow half a minor gridline tolerance Scale must be linear throughout whole y axis and must include 18 to 28. Award if bar chart or vertical line graph drawn instead for this mark only										
		1	All 4 points plotted correctly and joined with a straight line	Allow half a minor gridline tolerance Scale must be linear throughout whole y axis and must include 18 to 28.										
		<div><div>Temperature °C</div><div><table border="1"><thead><tr><th>Day</th><th>Temperature (°C)</th></tr></thead><tbody><tr><td>Monday</td><td>18</td></tr><tr><td>Tuesday</td><td>24</td></tr><tr><td>Wednesday</td><td>28</td></tr><tr><td>Thursday</td><td>22</td></tr></tbody></table></div></div>					Day	Temperature (°C)	Monday	18	Tuesday	24	Wednesday	28
Day	Temperature (°C)													
Monday	18													
Tuesday	24													
Wednesday	28													
Thursday	22													

Q	Marks in Total	Marks	Answer	Further Considerations/Comments	PS/UPS	SC	
14	5	5	Yes AND 99 532.8 (cm ³) OR Yes AND 110 592 (cm ³) AND 111 111(.1111) (cm ³) OR Yes AND 11 059.2 (cm ³) AND 10 000 (cm ³)	Award full marks if correct answer and correct reason seen	PS		
			Alternative Method 1: Volume first				
		1	48 × 48 × 48	OE method		UCM23	
		1	110 592 (cm ³)	ACO implies first mark		UCM23	
		1	(48 × 48 × 48) × 0.1 or 11 059.2 (cm ³) OR Their 110 592 × 0.1 or 11 059.2 (cm ³) OR (48 × 48 × 48) × 0.9 OR Their 110 592 × 0.9 OR 100 000 ÷ 0.9 OR 100 000 × 0.1 or 10 000	OE method 11 059.2 implies first 2 marks FOL their 110 592 Reverse percentage not expected at Level 1 but award if seen		UN14bii	
		1	99 532.8 (cm ³) OR 111 111(.1111) (cm ³) OR 11 059.2 AND 10 000	FOL the correct answer to their 110 592 × 0.9 Reverse percentage and answers of more than 3dp not expected at Level 1 but award if seen 99 532.8 (cm ³) implies first 3 marks 111 111(.1111) (cm ³) implies 3 rd mark 11 059.2 AND 10 000 implies first 3 marks		UN14bii	
		1	Yes AND 99 532.8 (cm ³) OR Yes AND 110 592 (cm ³) AND 111 111(.1111) (cm ³)	Accept Yes AND any correct reason FOL the correct decision based on their values		UN1	

			OR Yes AND 11 059.2 (cm ³) AND 10 000 (cm ³)			
			Alternative Method 2: Percentage decrease first			
		1	48 × 0.1 or 4.8 OR 48 × 0.9	OE method		UN14bii
		1	43.2	ACO implies first mark		UN14bii
		1	(48 × 0.9) × 48 × 48 OR Their 43.2 × 48 × 48	OE method FOL their 43.2 Accept 43.2 × 43.2 × 43.2 for this mark, may be implied by 80 621(.568) (cm ³)		UCM23
		1	99 532.8 (cm ³)	FOL the correct answer to their 43.2 × 48 × 48 Do not accept 80 621(.568) (cm ³) for this mark		UCM23
		1	Yes AND 99 532.8 (cm ³)	Accept Yes AND any correct reason FOL the correct decision based on their values Accept Yes AND 80 621(.568) (cm ³)		UN1

Q	Marks in Total	Marks	Answer	Further Considerations/Comments	PS/UPS	SC	
15	6	6	No AND 24.46 (m) OR No AND 2446 (cm) AND 2450 (cm)	Award full marks if correct answer and correct reason seen	PS		
			Alternative Method 1: Perimeter first				
		1	728 – 453 or 275 (cm) OR 265 + 230 or 495 (cm)	Finds missing side, May be seen or implied in subsequent working		UCM22 b	
		1	728 + 265 + their 275 + 453 + their 495 + 230	OE method		UCM22 b	
		1	2446 (cm)	ACO implies first 3 marks		UCM22 b	
		1	Their 2446 ÷ 100 OR 24.5 × 100	OE method to convert between cm and m FOL 2446		UCM20 a	
		1	24.46 (m) OR 2450 (cm)	FOL the correct answer to their 2446 ÷ 100 22.26 implies first 4 marks		UCM20 a	
		1	No AND 24.46 (m) OR No AND 2446 (cm) AND 2450 (cm)	Accept No AND any correct reason FOL the correct decision based on their 24.46 if $24 < \text{their } 24.46 < 25$ FOL the correct decision based on their 2446 and their 2450 if $2400 < \text{their values} < 2500$		UN10	
			Alternative Method 2: Conversion first				
		1	24.5 × 100 OR 728 ÷ 100 OR 265 ÷ 100 OR 230 ÷ 100 OR 453 ÷ 100	OE method to convert between cm and m		UCM20 a	

		1	2450 (cm) OR 7.28 (m) OR 2.65 (m) OR 2.3 (m) OR 4.53 (m)	ACO At least one correct conversion		UCM20 a
		1	Their 7.28 – their 4.53 or 2.75 (m) OR Their 2.65 + their 2.3 or 4.95 (m)	Finds missing side, May be seen or implied in subsequent working FOL their values from an attempt at conversion		UCM22 b
		1	Their 7.28 + their 2.65 + their 2.75 + their 4.53 + their 4.95 + 2.3	OE method FOL their values from an attempt at conversion		UCM22 b
		1	24.46 (m)	FOL the correct answer using their values		UCM22 b
		1	No AND 24.46 (m)	Accept No AND any correct reason FOL the correct decision based on their 24.46 if $24 < \text{their } 24.46 < 25$		UN10

Total: 45 marks

Mapping Matrix

Totals	UN	UCM	HID	PS	UPS	SC
Section A	9	4	2	6	9	N/A
Section B	22	16	7	39	6	N/A
Total (%)	52%	33%	15%	75%	25%	24/31

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