

TQUK Functional Skills

Qualification in Maths at Level 1

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 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

- 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

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
1	1	1	2	ACO	UPS	UN2
2	1	1	22.86	ACO	UPS	UN11b
3	1	1	36	ACO	UPS	UN7
4	1	1	6583	ACO	UPS	UN3b
5	2	2	8171	Award full marks if correct answer seen	UPS	
		1	25 050 – 16 879	OE method		HID29b
		1	8171	ACO		HID29b
6	2	2	11.24 (cm)	Award full marks if correct answer seen	PS	
		1	56.2 ÷ 5	OE method		UN11b
		1	11.24 (cm)	ACO		UN11b
7	2	2	36 (cm)	Award full marks if correct answer seen	UPS	
		1	12 + 2 + 3 + 4 + 6 + 4 + 3 + 2	OE method to calculate perimeter		UCM22b
		1	36 (cm)	ACO		UCM22b

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC	
8	2	2	(£)29.40	Award full marks if correct answer seen	PS		
		1	42 × 0.7 or 29.4 OR 42 × 0.3 or 12.6	OE method to work out new price or percentage discount		UCM19	
		1	(£)29.40	ACO Must be 2dp		UCM19	
9	3	3	£31.25	Award full marks if correct answer seen	PS		
			Alternative Method 1: Multiply by 10 first				
		1	12.5 × 10 or 125	OE method		UN3a	
		1	Their 125 (× 1) ÷ 4	OE method FOL their 125 from correct method		UN9	
		1	£31.25	ACO Award 3 marks if correct answer given		UN9	
			Alternative Method 2: Fraction first				
		1	12.5 (× 1) ÷ 4	OE method		UN9	
		1	3.125	ACO		UN9	
		1	£31.25	FOL the correct answer to their 3.125 × 10		UN3a	
		Total: 15 marks					

Section B: Calculator

Q	Marks in Total	Marks	Answer	Further Considerations/Comments	PS/UPS	SC
1	1	1	2304	ACO	UPS	UN6b
2	1	1	248	ACO	UPS	UCM20d
3	2	1	0.625	ACO	UPS	UN16
		1	62.5 (%)	ACO If zero scored, award one mark special case if their decimal and percentage match each other		UN16
4	2	1	$\frac{9}{15}$	OE Fraction	UPS	HID31
		1		Accept any indication Mark intention FOL their fraction if $0 < \text{their } \frac{9}{15} < 1$		HID30a

Q	Marks in Total	Marks	Answer	Further Considerations/Comments	PS/UPS	SC
5	2	2	[187.2(km), 196.8(km)] and No	Award full marks if correct answer and correct reason given	PS	
		1	8 (cm) × 24km	OE method to apply scale Accept 7.8 (cm) to 8.2 (cm)		UCM21
		1	[187.2(km), 196.8(km)] and No	Answer within the stated range implies 1 st mark		UCM21

6	2	2	Teddy bear AND comparable figures for example Teddy bear AND 0.4 and 0.375 OR Teddy bear AND 40(%) and 37.5(%) OR Teddy bear AND $\frac{16}{40}$ and $\frac{15}{40}$	Award full marks if correct answer given	PS	
		1	0.4 and 0.375 OR 40(%) and 37.5(%) OR $\frac{16}{40}$ and $\frac{15}{40}$	OE fractions or comparable figures		HID30b
		1	Teddy bear AND comparable figures for example Teddy bear AND 0.4 and 0.375 OR	OE Teddy bear AND Any correct reason Accept OE fractions		HID30b

			Teddy bear AND 40(%) and 37.5(%) OR Teddy bear AND $\frac{16}{40}$ and $\frac{15}{40}$			
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7	2	1	A or C only (with no wrong options) or A AND C (plus just one wrong option)	Accept written in answer box or clearly identified on diagram	PS	UCM25b
		1	A AND C identified only	ACO Accept written in answer box or clearly identified on diagram Award 2 marks if correct answer given		UCM25b

Q	Marks in Total	Marks	Answer	Further Considerations/Comments	PS/UPS	SC	
8	3	3	Yes and correct reason for example Yes and (Lee only needs) 500 (g) OR Yes and (Lee can make) 2.4 (kg) OR Yes and (Lee can make) 2400 (g) AND (2 kg is) 2000 (g)	Award full marks if correct answer AND Any correct reason seen	PS		
			Alternative Method 1: Conversion First				
		1	2000 (g) or 0.6 (kg)	ACO		UCM20b	
		1	Their $2000 \div (1 + 3)$ OR Their 0.6×4 OR 600×4	OE method to apply ratio FOL their 2000 or their 0.6 after at attempt at a conversion		UN17a	
		1	Yes and correct reason for example Yes and (Lee only needs) 500 (g) OR Yes and (Lee can make) 2.4 (kg) OR Yes and (Lee can make) 2400 (g) AND (2 kg is) 2000 (g)	Accept Yes AND any correct reason FOL the correct answer to their $2000 \div (1 + 3)$ after at attempt at a conversion		UN17a	
			Alternative Method 2: Ratio First				
		1	$2 \div (1 + 3)$	OE method to apply ratio		UN17a	
		1	0.5 (kg)	ACO		UN17a	
		1	Yes and correct reason for example Yes and (Lee only needs) 500 (g) OR Yes and (Lee only needs) 0.5 (kg) (but has) 0.6 (kg)	Accept Yes AND any correct reason FOL their 0.5 from correct method correctly converted to grams		UCM20b	

Q	Marks in Total	Marks	Answer	Further Considerations/Comments	PS/UPS	SC
9	3	3	(£)10 300	Award 3 marks if correct answer given	PS	
		1	2060	ACO May be seen or implied in a subsequent calculation		UN1
		1	Their 2060 × 5	OE method to relate the division to multiplication Accept 206, 260, 2600 or 2006 for their 2060 only Accept for example (two thousand and sixty) × 5		UN4
		1	(£)10 300	ACO		UN4
10	4	4	Yes and correct reason for example Yes and 1200 (ml) AND 1280 (ml) OR Yes and (Morgan drinks) 1.28 (litres) OR Yes and (would only need to drink) 7.5 (cups) OR Yes and (each cup would only need to hold) 150 (ml)	Award full marks if correct answer AND Any correct reason given	PS	
		1	1.2 × 1000 OR 160 ÷ 1000 (× 8)	OE method to convert one value from litres to ml or ml to litres		UCM20c
		1	1200 (ml) OR 0.16 (litres)	ACO any one value correctly converted from litres to ml or ml to litres. Any of these values implies 1 st mark		UCM20c
		1	1200 (ml) AND 1280 (ml)	ACO correct comparable figures		UCM20c

			OR 1.28 (litres) OR 7.5 (cups) OR 150 (ml)	7.5 (cups) from $1200 \div 160$ 150 from $1200 \div 8$ Implies first 2 marks		
		1	Yes and correct reason for example Yes and 1200 (ml) AND 1280 (ml) OR Yes and (Morgan drinks) 1.28 (litres) OR Yes and (would only need to drink) 7.5 (cups) OR Yes and (each cup would only need to hold) 150 (ml)	Accept Yes AND Any correct reason		UCM20c

Q	Marks in Total	Marks	Answer	Further Considerations/Comments	PS/UPS	SC
11	4	4	No AND correct reason for example No AND (£)84 639 OR No AND (£)202 853 AND (£) 202 714	Award full marks if correct answer and correct reason given	PS	
		1	144 895 × 0.4 or (£)57 958 OR 144 895 × 1.4	OE method to calculate 40%		UN14bi
		1	(£)202 853	ACO Implies 1 st mark		UN14bi
		1	202 853 – (59 618 + 58 596) OR 84 500 + 59 618 + 58 596	OE method		UN2
		1	No AND correct reason for example No AND (£)84 639 OR No AND (£)202 853 AND (£) 202 714	Accept No AND Any correct reason		UN1

Q	Marks in Total	Marks	Answer	Further Considerations/Comments	PS/UPS	SC	
12	4	4	No AND correct reason for example No AND (the start time will need to be) 11 am OR No AND (it won't be ready until) 1:15 pm OR No AND 2 hours AND 1 hour 45 mins OR No AND 2 hours AND 1.75 hours OR No AND 2 hours AND $1\frac{3}{4}$ hours OR No AND 120 mins AND 105 mins	Award full marks if correct answer AND Any correct reason seen	PS		
			Alternative Method 1: Percentage Discount First				
		1	150×0.2 or 30 OR 150×0.8	OE method to work out 20% or 20% discount		UN14bii	
		1	120 (mins)	ACO Implies 1 st mark		UN14bii	
		1	For example 2 (hours) or 1 (hour) 45 (mins) OR 1.75 (hours) or $1\frac{3}{4}$ (hours) OR 105 (mins) OR 11 am OR	OE Any one correct time conversion FOL their 120 mins from correct method for percentage correctly converted to hours OR Correctly working out start time or finish time 11 am from 1 pm – $(120 \div 60)$ 1:15 pm from 11:15 am + $(120 \div 60)$		UCM20e	

			1:15 pm	Allow FOL the correct start or finish time using their 120 from correct method for percentage Do not accept for example 1.45 hours		
		1	No AND correct reason for example No AND (the start time will need to be) 11 am OR No AND (it won't be ready until) 1:15 pm OR No AND 2 hours AND 1 hour 45 mins OR No AND 2 hours AND 1.75 hours OR No AND 2 hours AND $1\frac{3}{4}$ hours OR No AND 120 mins AND 105 mins	Accept No AND Any correct reason FOL the correct decision using their 120 (mins) from an attempt at percentage		UCM20e
		Alternative Method 2: Time Conversion First				
		1	2.5 (hours) or $2\frac{1}{2}$ (hours) OR 1 (hour) 45 (mins) OR 1.75 (hours) or $1\frac{3}{4}$ (hours) OR 105 (mins)	ACO OE Any one correct time conversion Do not accept for example 1.45 hours		UCM20e
		1	Their 2.5×0.2 or 0.5 OR 2.5×0.8	FOL their 2.5 from an attempt to convert 150 mins to hours		UN14bii

		1	2 (hours)	FOL the correct answer to their 2.5×0.8		UN14bii
		1	No AND correct reason for example No AND (the start time will need to be) 11 am OR No AND (it won't be ready until) 1:15 pm OR No AND 2 hours AND 1 hour 45 mins OR No AND 2 hours AND 1.75 hours OR No AND 2 hours AND $1\frac{3}{4}$ hours OR No AND 120 mins AND 105 mins	Accept No AND Any correct reason FOL the correct decision using their 2 (hours) from an attempt at percentage		UCM20e
13	4	1	Linear scale on y axis	Scale must start at zero and go up to at least 88 Zero may be implied by their scale	PS	HID27e
		1	Both axes labelled	for example £ and "Jan, Feb... etc"		HID27e
		1	At least 3 points plotted correct	Allow $\frac{1}{2}$ minor gridline tolerance Scale must be linear throughout whole y axis and must include 61 to 88 Award if bar chart or vertical line graph drawn instead for this mark only		HID27e
		1	All 6 points plotted correctly and joined with a straight line	Allow $\frac{1}{2}$ minor gridline tolerance Scale must be linear throughout whole y axis and must include 61 to 88		HID27e

Q	Marks in Total	Marks	Answer	Further Considerations/Comments	PS/UPS	SC
14	5	1	$80 \times 80 \times 80$ OR $10 \times 16 \times 25$	OE method to calculate one volume	PS	UCM23
		1	$80 \times 80 \times 80$ AND $10 \times 16 \times 25$ OR 512 000 (cm ³) OR 4000 (cm ³)	OE correct method to calculate both volumes OR At least one correct volume		UCM23
		1	512 000 (cm ³) AND 4000 (cm ³)	ACO Both volumes correct		UCM23
		1	Their 512 000 $\div$ 125 or 4096 OR Their 4000 $\times$ 125 or 500 000 OR Their 512 000 $\div$ their 4000 or 128	OE method to find comparable figures		UN17b
		1	Yes AND correct reason for example Yes AND 500 000 AND 512 000 OR Yes AND 4913 AND 4032 OR Yes and 128 (candles)	Accept Yes AND Any correct reason		UN1

Q	Marks in Total	Marks	Answer	Further Considerations/Comments	PS/UPS	SC
15	6	1	3×7.5 or 22.5 OR 2.5×3.4 or 8.5 OR 3.4×10 or 34 OR 7.5×0.4 or 3 OR 3×10 or 30 OR 0.4×2.5 or 1	OE method to find area of any one rectangle	PS	UCM22a
		1	$3 \times 7.5 + 2.5 \times 3.4$ Their 22.5 + their 8.5 OR $3.4 \times 10 - 7.5 \times 0.4$ or Their 34 – their 3 OR $3 \times 10 + 0.4 \times 2.5$ or Their 30 + their 1	OE method to find total area FOL their values from correct method used in first mark to find area of one rectangle		UCM22a
		1	31 (m ²)	ACO		UCM22a
		1	Their $31 \div 4$ or 7.75 OR $31 \div 4 \times 38.70$	FOL their 31 from an attempt to find total area Accept $31 \div 4 \times 38.70$ or (£)299.925 or (£)299.92 or (£)299.93 for this mark only		UN17b
		1	8 (packs)	FOL their area divided by 4 and then rounded up to the nearest whole number		UN12a
		1	(£)309.60	FOL the correct answer to their 8×38.70 their 8 must come from their $31 \div 4$ correctly rounded up to the nearest whole number Final answer must use correct money notation i.e. 2dp if pence given in answer		UN17b
Total: 45 marks						

SAMPLE

Mapping Matrix

Totals	UN	UCM	HID	PS	UPS	SC
Total (%)	47%	37%	17%	77%	23%	22/31

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