

# TQUK Functional Skills Qualification in Maths at Level 2

Mark Scheme (Past Paper 6)

#### 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

- 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	Answer/Examples	Further	PS/UPS	SC
	Marks			Considerations/Comments		
1	1	1	3.089	ACO	UPS	UN10i
2	1	1	12 600	ACO	UPS	UN2i
3	2	1	7.5	ACO		UN2ii
		1	225 000	FOL the correct answer using their		
				rounded value	UPS	
				Accept:	01.0	UN2ii
				226 200 from 30 000 × 7.54		
				226 170 from 30 000 × 7.539		
		0	400			
4	2	2	490	Award full marks if correct		
				answer given		
		I	49 OR 10 seen	ACO Showe on understanding of	UPS	
				BIDMAS		UNIZ
		1	490	ACO		LIN12
		•				01112
5	2	2	No AND 130(°)	Award full marks if correct		
			OR	answer and correct reason given		
			No AND 190(°) AND 180(°)	Ŭ		
		1	180 – 50 or 130(°)	OE method		
			OR		PS	UCM22i
			140 + 50 or 190(°)			
		1	No AND 130(°)	Accept No AND any correct reason		
			OR			UCM22i
			No AND 190(°) AND 180(°)			

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
6	2	2	$\frac{13}{75}$	Award full marks if correct answer given		
		1	$\frac{52}{300}$	OE fraction or probability e.g. 0.17(333) or 17.3(333)(%)	UPS	HID27
		1	$\frac{13}{75}$	FOL their fraction correctly written in its simplest form if their fraction can be simplified and only if first mark not awarded		HID27

7 2	2	7.85 (g/cm <sup>3</sup> )	Award full marks if correct answer given		
	1	785(0) ÷ 100(0)	OE method	UPS	UCM15ii
	1	7.85 (g/cm <sup>3</sup> )	ACO Ignore any units		UCM15ii
			Ignore any units		

8	3	3	Yes AND 4.3(975) (pints) OR Yes AND 2.55(827) (litres)	Award full marks if correct answer and correct reason given		
		1	2.5 × 1.759 OR 4.5 ÷ 1.759	OE method		UCM14i
		1	4.3975 (pints) OR 2.55(827…) (litres)	ACO Implies 1 <sup>st</sup> mark	PS	UN10ii
		1	Yes AND 4.3(975) (pints) OR Yes AND 2.55(827…) (litres)	Accept Yes AND any correct reason FOL the correct decision using their 4.3975 or their 10.51(508) if 4 < their 4.3975 < 5 or 2 < their 2.55(827) < 3		UN9

Total: 15 marks

#### **Section B: Calculator**

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
1	1	1	8.375	ACO	UPS	HID23ii
2	1	1	90 (cm <sup>2</sup> )	ACO	UPS	UCM20
3	2	2	(Website) A AND 37.5(%) OR (Website) A AND 0.375 and 0.34 OR (Website) A AND $\frac{75}{200}$ and $\frac{68}{200}$	Award full marks if correct answer and correct reason given		
		1	$37.5(\%)  OR  0.375 and 0.34  OR  \frac{75}{200} \text{ and } \frac{68}{200}$	OE method e.g. may find 34% and $\frac{3}{8}$ of an integer OE fractions which allow a direct comparison	PS	UN4
		1	(Website) A AND 37.5(%) OR (Website) A AND 0.375 and 0.34 OR (Website) A AND $\frac{75}{200}$ and $\frac{68}{200}$	Accept (Website) A AND any correct reason OE fractions which allow a direct comparison		UN4
			Q'U	·		

Q	Total	Marks	Answer/Examples	Further	PS/UPS	SC
	Marks			Considerations/Comments		
4	2	2	59 (°F)	Award full marks if correct		
				answer given		
		1	$\frac{9\times15}{5}+32$	OE method to substitute 15 into formula	UPS	UN3ii
		1	59 (°F)	ACO		UN3ii

5	2	2	200(%)	Award full marks if correct answer given		
		1	(12 – 4) ÷ 4 × 100	OE method × 100 may be implied by their answer	UPS	UN6a
		1	200(%)	ACO		UN6a

6	2	1	<ul> <li>A square drawn with one of the following:</li> <li>Side length 2 squares</li> <li>Positioned 4 squares away from the fishpond</li> </ul>	Mark intention	PS	UCM18ii
		1	A square drawn with side length 2 squares <b>and</b> positioned 4 squares away from the fishpond	Mark intention		UCM18ii



Q	Total	Marks	Answer/Examples	Further	PS/UPS	SC
	Marks			Considerations/Comments		
7	3	3	No AND correct reason e.g. No AND 125 (more cupcakes) OR No AND 25 (cupcakes per part) AND 20 (cupcakes per part) OR No AND 320 (cupcakes in total)	Award full marks if correct answer and correct reason given		
		1	$400 \div (9 + 4 + 3)$ or 25 (cupcakes per part) OR 100 ÷ 5 or 20 (cupcakes per part)	OE method to apply ratio		UN11i
		1	$400 \div (9 + 4 + 3) \times 9 \text{ or } 225 \text{ (lemon} \\ \text{cupcakes)} \\ \text{AND} \\ 400 \div (9 + 4 + 3) \times 4 \text{ or } 100 \\ (\text{strawberry cupcakes}) \\ \text{OR} \\ 400 \div (9 + 4 + 3) \text{ AND } 100 \div 5 \\ \text{OR} \\ 25 \text{ (cupcakes per part)} \\ \text{AND } 20 \text{ (cupcakes per part)} \\ \text{OR} \\ 20 \times 16 \text{ or } 320 \text{ (cupcakes in total)} \\ \end{array}$	OE method to find comparable figures Award if 125 (more cupcakes) seen	PS	UN11i
		1	No AND correct reason e.g. No AND 125 (more cupcakes) OR No AND 25 (cupcakes per part) AND 20 (cupcakes per part) OR No AND 320 (cupcakes in total)	Accept No AND any correct reason		UN11i

G	l otal Morko	Marks	Answer/Examples	Further Considerations/Commente	PS/UPS	SC
	Marks			Considerations/Comments		
8	3	3	Yes AND (£)1 019 200	Award full marks if correct answer given		
		1	980 000 × 0.04 OR 980 000 × 1.04	OE method	DC	UN5i
		1	392 000 OR 1 019 200	ACO	FO	UN5i
		1	Yes AND (£)1 019 200	FOL their 1 019 200 correctly compared with 1 020 000		UN1

9	3	3	No AND 20 724 (cm <sup>2</sup> )	Award full marks if correct answer given		
		1	3.14 × 30 × 30 (× 2) or 2826 or 5652	OE method to work out area of one or both circles Award if area of circle is seen in volume calculation e.g. $3.14 \times 30 \times 30 \times 80$ may be implied by 226 080	PS	UCM17ii
		1	3.14 × 30 × 30 × 2 + 2 × 3.14 × 30 × 80 OR 5652 × 2 × 3.14 × 30 × 80 OR 5652 + 15 072 or 20 724	OE method to work out total surface area		UCM17ii
		1	No AND 20 724 (cm <sup>2</sup> )	Accept No AND any correct reason		UCM17ii

Q	Total	Marks	Answer/Examples	Further	PS/UPS	SC
	Marks			Considerations/Comments		
10	3	3	(£)8.40	Award full marks if correct		
				answer given		
		1	21.60 ÷ 0.72	OE method		UN6b
		1	30 or 8.4	ACO Implies 1 <sup>st</sup> mark	PS	UN6b
		1	(£)8.40	FOL the correct answer to their 30 – 21.6		UN6b
	•	•				•

11	4	4	132(.617) (lbs)	Award full marks if correct answer given		
		1	3.14 × 40 × 40 × 120	OE method		UCM17i
		1	602 880 (cm <sup>3</sup> )	ACO Implies 1 <sup>st</sup> mark		UCM17i
		1	Their 602 880 ÷ 4546	OE method to substitute their volume into the formula Their volume must come from multiplying at least 3 values together	PS	UN3i
		1	132(.617) (lbs)	FOL the correct answer to their 602 880 ÷ 4546 if their 602 880 comes from multiplying at least 3 values together Accept any correct rounding or truncating		UN3i

Q	Total	Marks	Answer/Examples	Further	PS/UPS	SC
	Marks		-	Considerations/Comments		
12	4	1	1500 × 1.02 <sup>2</sup>	OE method to work out compound interest Award if 30 and 30.6 seen OR 1530 and 30.6 seen		UCM13
		1	(£)1560.6(0)	ACO Implies 1 <sup>st</sup> mark	PS	UCM13
		1	(3000 – their 1560.6) ÷ 119.95 OR 1439.4 ÷ 119.95	OE method to work out how many months FOL their 1560.6		UCM13
		1	12 (months) or 1 year	FOL the correct answer to their (3000 – their 1560.6) ÷ 119.95		UCM13

13	4	1	154 (cm)	ALL ACO Mean		HID25
		1 82 (cm) ALL ACO Range				HID25
		1	No AND correct reason e.g. mean height in Field A is lower AND 154 seen	OE comment comparing means FOL their 154 if their 154 is in the range [118, 200]	PS	HID25
		1	No AND correct reason e.g. range for Field A is greater AND 82 seen	OE comment FOL their 82 if their 82 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	3.416 (m) or 4 (whole metres)	Award full marks if correct answer given		
		1	2 + 2 + 1.75 + 1.75 + 2.5 or 10 (ft)	OE method to work out perimeter		UCM16ii
		1	Their 10 × 0.305	OE method to convert their perimeter into feet FOL their 10.4 from correct method for perimeter		UCM14i
		1 3.05 (m) ACO Implies first 2 marks		PS	UCM14i	
		1 Their 3.05 × 0.12 or 0.366 C OR ir Their 3.05 × 1.12 F n a A	OE method to find 12% or 12% increase FOL their 3.05 from a correct method for perimeter and an attempt at a conversion Allow use of 3 from functional rounding		UN5i	
		1	3.416 (m) or 4 (whole metres)	Accept any correct rounding e.g. 3.36 (m) from 3 × 1.12		UN5i

Q	Total	Marks	Answer/Examples Further		PS/UPS	SC
	Marks			<b>Considerations/Comments</b>		
15	6	1	0.5 × 3.4 × 4.1 or 6.97 (m <sup>2</sup> )	OE method to work out area of triangle		UCM16i
		1	0.5 × 3.4 × 4.1 + 4.1 × 4.1 OR 6.97 + 4.1 × 4.1 OR 6.97 + 16.81	OE method to work out total area		UCM16i
		1	23.78 (m <sup>2</sup> )	ACO Accept 24 (m <sup>2</sup> ) 23.78 implies first 2 marks	PS	UCM16i
		1	(£)75.99	ACO Median		HID23i
		1	Their 75.99 × their 23.78 or 1807.04(22) OR Their 75.99 × 24 or 1823.76	OE method to find total cost FOL their 75.99 if in the range [30.50, 100] FOL their 23.78 from a correct method for total area or partial area		UCM15iii
		1	(£)1807 OR (£)1824	FOL the correct answer to their 75.99 × their 23.78 correctly rounded to the nearest $\pounds$		UN9

Total: 45 marks

# Mapping Matrix

Totals	UN	UCM	HID	PS	UPS	SC
Section A	8	5	2	5	10	N/A
Section B	20	19	6	39	6	N/A
Total (%)	47%	40%	13%	73%	27%	21/28

# **Ofqual Mapping Requirements**

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

# End of Mark Scheme