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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 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	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**	UPS	
		1	3 ÷ 10 (× 60) or 0.3 OR 3 × 6	OE method		UCM15i
		1	18 (mph)	ACO		UCM15i
4	2	1	$\frac{86}{100}$	ACO OE fraction ALL	UPS	UN4
		1	86%	ACO ALL If zero scored, then award one-mark special case if their fraction and their percentage match each other		UN4

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
5	2	2	(£)23.60	**Award full marks if correct answer seen**	PS	
		1	20 × 0.18 or 3.6 OR 20 × 1.18 or 23.6	OE method		UN5i
		1	(£)23.60	ACO Must be 2dp		UN5i
6	2	2	4625	**Award full marks if correct answer seen**	UPS	
		1	2500, 3000, 4250, 5000 … OR 6600, 5500, 5000, 4250 … OR (4250 + 5000) ÷ 2 OR 9250 ÷ 2	OE method to work out median		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**	UPS	
		1	2.5 × 50 000	OE method		UCM18i
		1	125 000 cm OR 1.25 km	ACO UNIT OE correct distance with correct unit		UCM18i

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

Section B: Calculator

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
1	1	1	–865 –820 –814 –811	ACO	UPS	UN1
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**	UPS	
		1	360 – 120 – 120 – 80	OE method		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**	PS	
		1	3.14 × 1.38	OE method		UCM16ii
		1	4.3(332)	ACO Implies 1st mark		UCM16ii
		1	Yes AND 4.3(332) (m)	Accept Yes AND Any correct reason. FOL their 4.3(332) correctly compared with 4.5 if 4 < their 4.3(332) < 5		UN9
7	3	3	No AND 71.5 (m^2) OR No AND 12 (litres)	**Award full marks if correct answer given**	PS	
		1	91 ÷ 14 or 6.5 (m^2 per litre)	OE method		UN11ii
		1	91 ÷ 14 × 11 OR 78 ÷ (91 ÷ 14) OR 78 ÷ 6.5	OE method		UN11ii
		1	No AND 71.5 (m^2) OR No AND 12 (litres)	ACO Accept No **AND** Any correct reason.		UN11ii
8	3	3	Greenland AND –10 (°C)	**Award full marks if correct answer given**	PS	
		1	$\frac{5(14-32)}{9}$	OE method to substitute 24 into formula		UN3ii
		1	–10 (°C)	ACO		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**	PS	
		1	33.6(0) ÷ 1.05	OE method		UN6b
		1	32	ACO Implies 1st mark		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**	PS	
		1	20 AND 60 AND 100 AND 140	ACO Correct midpoints identified		HID24
		1	(20 × 7) + (60 × 34) + (100 × 100) + (140 × 9) OR 140 + 2040 + 10 000 + 1260 or 13 440	Allow consistent use of upper of lower bounds multiplied by the frequency Allow one error in midpoints, upper bounds or lower bounds		HID24
		1	Their 13 440 ÷ 150 or 89.6	FT their 13 440 from correct method Allow consistent use of upper of lower bounds multiplied by the frequency divided by 150 Allow one error in midpoints, upper bounds or lower bounds Do not allow 150 ÷ 4		HID24
		1	No AND 89.6	Accept No **AND** Any correct reason		HID24

<table>
<tr><th>Q</th><th>Total Marks</th><th>Marks</th><th>Answer/Examples</th><th>Further Considerations/Comments</th><th>PS/UPS</th><th>SC</th></tr>
<tr><td rowspan="6">11</td><td rowspan="6">4</td><td>4</td><td colspan="2">Award full marks for fully correct table</td><td rowspan="6">PS</td><td></td></tr>
<tr><td>1</td><td>80 ÷ (5 + 3 + 2) or 8</td><td>OE method</td><td>UN11i</td></tr>
<tr><td>1</td><td>5 × their 8 or 40
OR
3 × their 8 or 24
OR
2 × their 8 or 16</td><td>OE method
FOL their 8 from correct method for ratio</td><td>UN11i</td></tr>
<tr><td>1</td><td>40 AND 24 AND 16 seen</td><td>ACO values do not need to be in correct position in table</td><td>UN11i</td></tr>
<tr><td>1</td><td>Fully correct table
<table>
<tr><th>Activity</th><th>Number of Students</th></tr>
<tr><td>Swimming</td><td>40</td></tr>
<tr><td>Rock climbing</td><td>24</td></tr>
<tr><td>Go karting</td><td>16</td></tr>
<tr><td>Total</td><td>80</td></tr>
</table></td><td>ACO</td><td>UN11i</td></tr>
</table>

Q	Total Marks	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**	PS	
		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		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	PS	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]		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**	PS	
		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 OR 2 × 28.26 + 2 × 3.14 × 3 × 12 OR 56.52 + 2 × 3.14 × 3 × 12 OR 56.52 + 226.08	OE method to work out total surface area		UCM17ii
		1	282.6 (cm^2)	ACO Implies first 2 marks		UCM17ii
		1	Their 282.6 × 50 ÷ 1150 or 12(.2869…)	OE method FOL their 282.6		UN11ii
		1	13 (tins)	FOL their 12(.2869…) correctly rounded up to the nearest whole number		UN9

Q	Total Marks	Marks	Answer/Examples	Further Considerations/Comments	PS/UPS	SC
15	6		**Alternative Method 1: Area of Triangle**		PS	
		1	0.5 × 2.47 × 4.18 or 5.1623	OE method to work out area of triangle Accept any correct rounding or truncating of 5.1623		UCM16i
		1	0.5 × 2.47 × 4.18 + 5.65 × 4.18 OR 5.1623 + 5.65 × 4.18 OR 5.1623 + 23.617	OE method to work out total area		UCM16i
		1	28(.7793) (m)	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
			Alternative Method 2: Area of Trapezium Not expected at Level 2 but award if used			
		1	0.5 × (8.12 + 5.65) or 6.885 OR (8.12 + 5.65) × 4.18 or 57.5586	OE method to start to use the formula for area of trapezium 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

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