



GCSE MARKING SCHEME

SUMMER 2019

**GCSE
MATHEMATICS – NUMERACY
UNIT 1 - FOUNDATION TIER
3310U10-1**

INTRODUCTION

This marking scheme was used by WJEC for the 2019 examination. It was finalised after detailed discussion at examiners' conferences by all the examiners involved in the assessment. The conference was held shortly after the paper was taken so that reference could be made to the full range of candidates' responses, with photocopied scripts forming the basis of discussion. The aim of the conference was to ensure that the marking scheme was interpreted and applied in the same way by all examiners.

It is hoped that this information will be of assistance to centres but it is recognised at the same time that, without the benefit of participation in the examiners' conference, teachers may have different views on certain matters of detail or interpretation.

WJEC regrets that it cannot enter into any discussion or correspondence about this marking scheme.

WJEC GCSE MATHEMATICS - NUMERACY (NEW)

SUMMER 2019 MARK SCHEME

GCSE Mathematics-Numeracy Unit 1: Foundation Tier	Mark	Comments
1(a) Rectangle 4cm by 3cm drawn	B1	
Rectangle drawn at least 3cm from the house AND at least 1 cm from the hedge	B1	FT 'their rectangle'
Rectangle drawn exactly 2 cm from the flower bed	B1	FT 'their rectangle'
1(b) 12 (m ²)	B1	FT 'their rectangle'. It must be a rectangle or square. This may be seen or implied in a calculation for costs.
15 × 12	M1	FT 'their 12' or their derived area.
(£)180	A1	FT 'their 12' × 15 correctly evaluated provided 'their 12' is 6 or more.
1(c) cuboid	B1	
2(a) Level -3	B1	
2(b) (Level) -2	B1	Allow 2-
2(c) -1 + 10 – 5 or -1 + 5	M1	May be seen in a diagram. Method may be seen in stages.
4	A1	If no marks award SC1 for appropriate sight of 9 (from -1 + 10)
3(a) 40/100 × £3 × 90 or equivalent e.g. (£)3 × 90 ÷ 10 × 4	M2	M1 for: 40/100 × (£)3 (=1.2(0)) OR 40/100 × 90 (=36) OR (£)3 × 90 (=270) These may be implied in workings with other incorrect workings, e.g. 90 ÷ 3(= 30)then 40/100 × (90 ÷ 3) (= 12)
(£)108	A1	ISW E.g. Ignore further working. e.g. 108 + 270 = 378 or 270 – 108 = 162
3(b) 90 ÷ 5 × 8 or equivalent e.g. 90 × 1.6 18 × 8 Or use of 10 miles is 16km and 9 × 16	M1	Method may be seen in stages. Calculation that could lead to the correct answer if evaluated correctly.
144 (km)	A1	

4(a) (lemonade bought =) 200×300 60000 (ml) (number of bottles needed=) 60 (cost of bottles $60 \times 90p$=) 5400(p) or (£)54 (cost of 3 packets of cups=) (£)12 or 1200(p) (Total cost=) (£)66 or 6600 (p)	M1 A1 B1 B1 B1 B1	Ignore units at this stage FT 'their 60000' ÷ 1000 correctly evaluated. This may be implied in the cost of the bottles. Ignore units at this stage FT 'their 60' × 90 correctly evaluated. If units are given they must be correct. FT 'their (£)12' + 'their cost of their number of bottles' correctly evaluated provided consistent units are used.
Alternative method (Number of cups per bottle $1000 \div 200$ =) 5 (number of bottles needed=) $300 \div 5$ 60 (cost of bottles $60 \times 90p$=) 5400(p) or (£)54 (cost of 3 packets of cups=) (£)12 or 1200(p) (Total cost=) (£)66 or 6600 (p)	B1 M1 A1 B1 B1 B1	<i>This may be embedded e.g. $100 \div 5 = 200$ FT $300 \div$ 'their $1000 \div 200$' FT provided correctly evaluated. This may be implied in the cost of the bottles.</i> <i>Ignore units at this stage FT 'their 60' × 90 correctly evaluated.</i> <i>If units are given they must be correct. FT 'their (£)12' + 'their cost of their number of bottles' correctly evaluated provided consistent units are used.</i>
Organisation and communication Writing	OC1 W1	For OC1, candidates will be expected to: • present their response in a structured way • explain to the reader what they are doing at each step of their response • lay out their explanations and working in a way that is clear and logical • write a conclusion that draws together their results and explains what their answer means For W1, candidates will be expected to: • show all their working • make few, if any, errors in spelling, punctuation and grammar • use correct mathematical form in their working • use appropriate terminology, units, etc.
4(b) 300×50 or $300 \times (\pounds)0.5(0)$ 15000 (p) or (£)150 (profit=$150 - 66$) (£)84 or 8400(p)	M1 A1 B1	If incorrect units not penalised in (a), penalise -1 once only for inconsistent or incorrect units in (b) Ignore units given at this stage Mark final answer FT 'their 150' - 'their 66' from (a) correctly evaluated provided consistent units are used. If 'their 66' is > 'their 150' allow negative answers from their workings or a statement following their workings that says this is a loss (not a profit).

5. (Snowdon) $6 \times 1000/1000$ or $6 \times 900/1000$ or $6 \times 950/1000$ or $6 \times 940/1000$ or $6 \times 945/1000$ $6(^{\circ}\text{C})$ or $5.4(^{\circ}\text{C})$ or $5.7(^{\circ}\text{C})$ or $5.64(^{\circ}\text{C})$ or $5.67(^{\circ}\text{C})$ (Kilimanjaro) $6 \times 4000/1000$ or $6 \times 5000/1000$ or $6 \times 4100/1000$ or $6 \times 4080/1000$ or $6 \times 4090/1000$ or $6 \times 4085/1000$ $24(^{\circ}\text{C})$ or $30(^{\circ}\text{C})$ or $24.6(^{\circ}\text{C})$ or $24.48(^{\circ}\text{C})$ or $24.54(^{\circ}\text{C})$ or $24.51(^{\circ}\text{C})$	M1 A1 M1 A1	Working must be seen ISW Allow answers to calculations to be written as rounded or truncated values. Errors seen in calculations before rounding or truncating award A0 If M0 A0, award SC1 for unsupported answers in the range 5 to 6 inclusive. Working must be seen ISW Allow answers to calculations to be written as rounded or truncated values. Errors seen in calculations before rounding or truncating award A0 If M0 A0, award SC1 for unsupported answers in the range 24 to 25 inclusive.
6. ($\frac{1}{4}$ kg strawberries costs) (£) 2.15 (Mr Thomas pays) $20 - 2.55$ OR (Cost of strawberries from £20) $20 - 8.60 \div 4$ (Cost of $1\frac{1}{2}$ kg raspberries) $20 - 2.55 - 8.60 \div 4$ (= £) 15.3(0) (Cost of 1 kg raspberries) $15.3(0) \div 3 \times 2$ or $15.3(0) \div 1.5$ (= £) 10.2(0)	B1 M1 m1 A1 M1 A1	Penalise -1 only on their first possible A1 for incorrect units. Ignore units not given (=£17.45) (= $20 - 2.15 = \text{£}17.85$) (=£17.45 - £2.15 or £17.85 - 2.55) Sight of (£)15.3(0) implies all previous marks FT 'their $8.60 \div 4$' FT 'their 15.3(0)'

8(b) Sight any of any one of the following: • $(21.13\text{kg} - 20\text{kg}) = 1130 \text{ (g)}$ • 21130 (g) • consistent conversion of units g to kg, keeping 21.13kg and 20kg unchanged Coat AND Jumper (820 + 320)	B1 Allow 1.13 (kg) provided it is interpreted correctly Accept evidence in working, do not award if working is not seen If units are given they must be correct B2 Do not award B2 unless either previous B1 awarded or appropriate correct working shown Do not award B2 if incorrect working or no working seen B1 for any of the following: • $1130 - 820 = 310$ • Coat with sight of 310(g) left • Unambiguous choice of 820(g) AND 320(g) to remove • 'coat and jumper' without working shown, not to be awarded if incorrect working seen Note: B1, B2 for unambiguous choice of Coat AND Jumper with for sight of $21130 - 820 - 320 = 19990$ or $820 + 320 = 1140$ OR B1, B1 for sight of $21130 - 820 - 320 = 19990$
8(c)(i) Appropriate calculation, e.g. $9 \times 11.4(0)$, $34.2(0) + 68.4(0)$, $3 \times 34.2(0)$, $45.6(0) + 57(.00)$, $(45.6 + 5.7) \times 2$ 102.6(0) (euros)	M1 Calculation that could lead to the correct answer if evaluated correctly A1
8(c)(ii) Appropriate calculation, e.g. $11.4(0) \div 2 + 22.8(0)$, $57(.00) \div 2$, $(34.20 + 22.80) \div 2$ 28.5(0) (euros)	M1 Calculation that could lead to the correct answer if evaluated correctly A1
8(d)(i) Correctly completed frequency diagram	B1 Bars of correct height (16 and 33) for the missing intervals
8(d)(ii) $1.12 \leq b < 1.16$	B1

9(a) 24 (miles per gallon)	B1	
9(b) 2.2 (litres)	B1	
9(c)(i) Sight of 55, 57, 53, 17, 48 (55+57+53+17+48) ÷ 5 (230 ÷ 5 =) 46 (miles per gallon)	B1 M1 A1	FT 'method to sum 5 numbers' provided at least 3 are correct FT provided at least 4 correct values are used FT responses must be evaluated not left as improper fractions, however allow rounded or truncated final answers
9(c)(ii) Explanation of why it is not a suitable average, e.g. 'included the rogue value', 'gives a lower value', '17 appears to be an anomaly', 'one car goes far less than the others', 'because there is one really low value', 'mean is unduly affected by use of 17'	E1	Allow, e.g. 'only considered 5 cars', 'not enough cars', 'because there are fewer cars', 'insufficient data', 'not considered all the cars with engines less than 1.5 litres', 'not considered all 6 (or 7) cars'
9(d) Straight line of best fit, following the trend with some points above and some below the line	B1	Allow slight adjustment down, considering the rogue value, the trend must be correct The line of best fit, shown or if extended, must not be connected to any corners of the graph paper Allow intention of a straight line
9(e) Unambiguous decision with a reason, e.g. 'Yes, as more cars with engines less than 2.5 litres', 'Yes, many cars with engine size less than 2.5 litres' 'Yes, 15 or 16 cars shown <2.5 litres', 'Yes, as only 10 cars (out of 26) with ≥2.5 litre engine', 'Yes, more data', 'Yes, more readings', 'Yes, stronger correlation', 'Yes, (more) points are closer to the line of best fit', 'Yes, more cars', 'Don't know (or No), as there is one rogue value for a car with engine size <2.5 litres', 'No, data not a large set',	E1	Allow, e.g. 'Yes, they are closer together', 'Yes, plots before 2.5 are close together' Yes, results are quite similar' 'Yes, they have a similar range in fuel economy', 'Yes, as only 10 cars (out of 26) with >2.5 litre engine' Do not accept, e.g. 'Yes, because before there is a lot of fuel economy', Do not accept contradiction between the choice of yes, no and don't know and their reason
10(a) $045(^{\circ}) \pm 2^{\circ}$	B1	Ignore any additional direction included, such as N(orth) E(ast) (or an incorrect direction) B0 for $45^{\circ} \pm 2^{\circ}$ and/or N(orth) E(ast)
10(b) $202(^{\circ}) \pm 2^{\circ}$	B1	