GCSE MARKING SCHEME

AUTUMN 2019

GCSE
MATHEMATICS – NUMERACY
UNIT 2 - FOUNDATION TIER
3310U20-1

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.

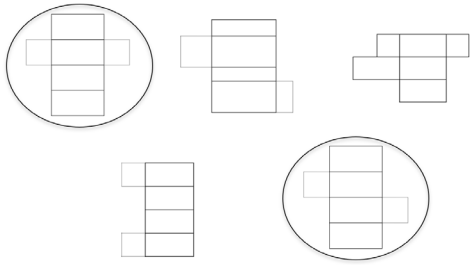
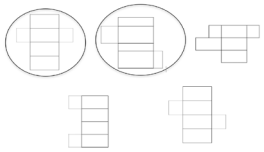
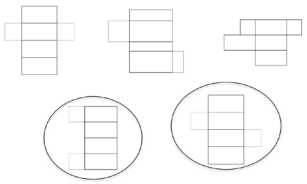
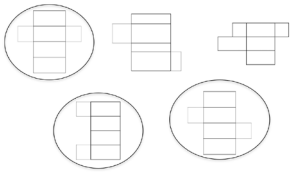
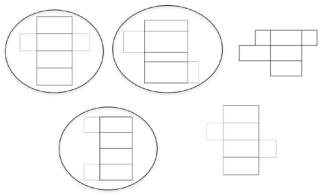
WJEC regrets that it cannot enter into any discussion or correspondence about this marking scheme.

WJEC GCSE MATHEMATICS - NUMERACY

AUTUMN 2019 MARK SCHEME

GCSE Mathematics – Numeracy **Unit 2: Foundation Tier**	**Mark**	**Comments**
1.(a) ✓ (£3.45) (£)19.96 (£)73.77 (£)389.7(0) (£) 486.88	 B1 B1 B1 B1	 B0 for (£)389.07 FT provided 3 derived values added to (£)3.45 B0 for omission of (£)3.45 from 'their (£)486.88' e.g. B0 for (£)483.43 if all other values correct.
1.(b) 0·25 × (£)486.88 or equivalent (£)121.72	M1 A1	FT 0·25 × 'their (£)486.88' CAO (must be correct answer for 0·25 × 'their (£)486.88', answer may be rounded or truncated) ISW If M0, award SC1 for answer of £365.16 (0·75 × (£)486.88)
1.(c) 12 (calculators)	B2	B1 for 13 (calculators) or sight of 12.6(2…) OR sight of (£)164 ÷ (£)12.99 or equivalent Allow sight of 12 × (£)12.99 = (£)155.88 OR 13 × (£)12.99 = (£)168.87 for B1 If B0, then award SC1 for an answer of 42 calculators (30 + 12)
2.(a) 143 × 0.65 + 50 × 0.98 (£)141.95	M2 A1	Allow M2 for 143 × 65 + 50 × 98 M1 for 143 × (0.)65 (= (£)92(.)95) OR 50 × (0.)98 (= (£)49(.)00)) M1 for correct expression with mixed units e.g. 143 × 0.65 + 50 × 98 CAO ISW Sight of unsupported 140.091 gains M2 A0 (BIDMAS error)

2.(b) ✓ (cost of 125 small letters = 125 × 0.65 =) (£) 81.25 (total cost of large letters =) (£)119.47 – 81.25 (= (£)38.22) (number of large letters =) ((£)38.22) ÷ 0.98 or equivalent = 39 (large letters)	 B1 M1 m1 A1	 May be implied in later working FT (£)119.47 – 'their (£) 81.25' FT 'their (£) 38.22' ÷ 0.98 Accept 3822 ÷ 98 for m1 Allow m1 for incorrect place value e.g. 3822 ÷ 0.98 FT ((£)119.47 – 'their 81.25') ÷ 0.98 Accept embedded answers Sight of 125 × (£)0.65 + 39 × (£)0.98 = (£)119.47 gains B1M1m1A1
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.
2. (c) 51 cm	B1	

2 (d) 	B2	Award B1 for 1 or 2 correct nets indicated with no more than 1 incorrect net indicated E.g. Award B1  or  or  Award B0 for 

3.(a) Full explanation including appropriate calculation referring to kg ↔ lb conversion e.g. "(Tili is heavier because) 22lb is (about) 10kg" "(Tili is heavier because) 14.5kg is (about) 31.9lb" "14.5 kg is more than 29lbs because a kg is more than 2 lbs". "since 1 kilogram is more than 2 pounds, then 22lbs is less than 11kg"	E2	Allow E1 for partial explanation e.g. "…(because 1kg is about) 2·2 lb" "……(because 1lb is about) 0.4(5….) kg" "…..because 1 kilogram is more than 2 pounds" "22lb is about 11kg" Allow E1 for sight of 22 ÷ 2·2 or 14·5 × 2·2 but not calculated Do not accept "kg is heavier than lb" "….because 1kg is more than 1lb"
3.(b) (i) 600(g)	B2	Accept 0.6(00) kg B1 for sight of 250(g) AND 350(g) Mark final answer
3.(b) (ii) ✓ For sight of 18 000 (g) OR 0·6(00) kg 18 000 ÷ 600 OR 18 ÷ 0·6 or equivalent 30 (days)	 B1 M1 A1	FT from (b)(i) for possible B1M1A1 FT 'their 600' ÷ 1000 FT 'their 18 000' ÷ 'their 600' or 18 ÷ 'their 0·6' Allow M1A0 18 ÷ 600 Award M1 for evidence of working with multiples of 600 with a target of reaching 18 000 e.g. 600, 1200, 1800…. Answer must be correct on FT from (b)(i) and from correct workings
4.(a) 36 minutes	B1	
4.(b) Ten thousand, five hundred (and) thirty eight	B1	
4.(c) ✓ Identifying 2252 steps in the table (Number of steps = 10538 – 2656) = 7882 (steps) (Number of miles =) 7882 ÷ 2252 or equivalent = 3·5 (miles) or 3½ (miles)	B1 B1 M1 A1	May be implied in later working May be identified in the table (must be explicit) FT 'their 7882' ÷ 'their 2252' Allow sight of 3 × 2252 = 6756 OR 4 × 2252 = 9008 for M1 Award M0 for 10538 ÷ 2252 OR 2656 ÷ 2252 Accept embedded answers 3·5 × 2252 = 7882 Accept answers correct to 1 d.p rounded or truncated on FT
Alternative method *Identifying 2252 steps in the table* *10 538 ÷ 2252) - (2656 ÷ 2252)* *(= 4.679….. – 1.179…..)* *= 3·5 (miles) or 3½ (miles)*	*B1* *M2* *A1*	*May be implied in later working* *May be identified in the table (must be explicit)* *M2 for **complete method***

5. 0.64 × 125 or (100 ×) 78/125	M1	Accept equivalent complete non calculator methods Allow 64% × 125 but do not accept 64% of 125 for M1 (unless 80 marks seen, in which case M1 A1)
80 (marks) or 62(.4%)	A1	Accept sight of 0.62(4) Accept sight of 80/125 for M1, A1
Conclusion e.g. 'Paulo (as 64% > 62.4%)', 'Paulo (as 80 > 78), 'Paulo (sight of $\frac{78}{125}$ and $\frac{80}{125}$)	A1	FT depends on M1 previously awarded If working with both Ceri and Paulo, with one correct and one incorrect, mark the correct method, i.e. possible M1, A1, but must be final A0 whatever conclusion is given
6(a) 4, 6 and 16 in this order	B2	Answers in the table take precedence B1 for any 2 correct entries
6(b) 38 bottles	B1	
6c) 30 × 2 ÷ 12 or 30 × 1.5 ÷ 9 or 30 ÷ 6 or equivalent	M1	
5	A1	Accept an embedded 5 for M1 A1, provided it is not contradicted by their choice of final answer, in which case award M1 A0, e.g. 12 × 5 = 60 salmanazars M1 A0 9 × 5 = 45, 9 salmanazars, M1 A0 9 × 5 = 45, M1 A1 12 × 5 = 60, M1 A1
7. ....., ..., 17, 18, 18 as the three eldest	B1	Must be eldest but not necessarily in order
10, 12, ..., ..., ..., as the two youngest	B1	Must be youngest but not necessarily in order FT 'their 18 (eldest)' – 8 and 'their 18 (eldest)' – 6 respectively If B0, B0 award SC1 here for sight of 18, 18 provided not other repeat ages
(Mean) (10+12+17+18+18) ÷ 5 or 75 ÷ 5 (-2)	M1	FT 'their 10 + 12 + 17 + 18 + 18' ÷ 5, provided it is a **sum of 5 values** divided by 5
(Coleen is) 13 (years old)	A1	FT 'their 75 ÷ 5' – 2 correctly evaluated, accepting rounded or truncated age,
8(a)(i) 33 × 6/11 or 6 × 33 ÷ 11	M1	
18 (friends)	A1	ISW Allow: • 18 friends 12 dogs for M1 A1 • sight of 18/33 for M1 A0 • 18 12 for SC1
8(a)(ii) $\frac{2}{3} \times \frac{6}{11}$ or $\frac{2}{3} \times \frac{18}{(33)}$	M1	FT 'their 18' 2/3 × 18 leading to an answer of 12 or a final answer of 12 implies M1
$\frac{36}{99}$ or $\frac{12}{33}$ or $\frac{4}{11}$	A1	ISW If no marks, award SC1 for sight of 12/18
8(b) 21 : 13 : 6	B1	Mark final answer Allow 21 dogs : 13 cats : 6 fish Do not accept 21 dogs 13 cats 6 fish

<table>
<tr><td>9(a) 1 : 1 000 000</td><td>B1</td><td></td></tr>
<tr><td>9(b) (Average speed in km/h =) $\frac{22}{25/60}$ or $\frac{22}{25} \times 60$
or $\frac{22}{25 \div 60}$

52.7 (km/h) to 53 (km/h)</td><td>M2

A1</td><td>Allow M2 for sight of correct method, including premature approximation (e.g. using 25/60 = 0.4(166...)

M1 for any one of:
• sight of 22 /(0.)25
• sight of 22 ÷ (0.)25
• for answer of 0.88 (km/min)
• for answer of 88

Treat use of 2.2 instead of 22 as MR-1 on accuracy mark only</td></tr>
<tr><td>10(a) Descriptions of no correlation, e.g.
‘no relationship’,
‘no correlation’,
'none',
‘no connection’</td><td>B1</td><td>Allow, e.g.
‘no’

Do not accept, e.g.
'(all) scattered (about)'<br>'random',
‘neutral’,
‘no pattern’,
‘varied correlation’,
‘mixed correlation’

Allow if a correct response is given with one of the phrases listed above.
Do not allow a correct response with an incorrect response, e.g. ‘none but slightly positive’</td></tr>
<tr><td>10(b)
<table><tr><th>Name</th><th>Height (cm)</th><th>Number</th></tr><tr><td>Gwenda</td><td>145</td><td>88</td></tr><tr><td>Daniel</td><td>166</td><td>88</td></tr><tr><td>Lotte</td><td>130</td><td>90</td></tr><tr><td>Iona</td><td>171</td><td>66</td></tr><tr><td>Steffan</td><td>171</td><td>24</td></tr></table></td><td>B4</td><td>All entries correct

B3 for any 8 or 9 entries correct

B2 for any 5, 6 or 7 entries correct

B1 for any 3 or 4 entries correct

Penalise -1 only if entries are consistently reversed in the table</td></tr>
</table>

11(a) (Buy 1 get 1 free, cost of 3 pizzas) (£)17.6(0)	B1	
(35% off 3 pizzas) 3 × 8.8(0) - 0.35 × 3 × 8.8(0) or 0.65 × 3 × 8.8(0)	M3	M2 for sight of • 0.35 × 3 × 8.8(0) (= £9.24) or equivalent • 0.65 × 8.8(0) (= £5.72) or equivalent M1 for any of • 3 × 8.8(0) (= £26.40) • 0.35 × 8.8(0) (= £3.08) or equivalent • FT for 3 × 'cost their reduced priced pizza' correctly evaluated provided 'cost their reduced priced pizza' < £8.80
(£)17.16 and selecting '35% off'	A1	CAO for (£)17.16 with a conclusion, but FT conclusion from 'their £17.60' with (£)17.16 comparison
11(b) Explanation, e.g. '(even number of pizzas gives) 50% off (which is better than 35%)', '50% off (is better than 35% off)', 'with an even number of pizzas he will get half of them free (which is more than 35% free)'	E1	Accept explanation based on a different even number pizzas, including buying 20 getting 10 free Allow, e.g. 'he would (only) pay for 5 pizzas (not 10)', 'half of the pizzas are free' 'he would (only) pay for half the pizzas', 'get 5 pizzas free', 'the more pizzas you get, the better this option is' '2 is an even number and goes into 10 exactly' **Do not ignore** contradictions