



GCSE MARKING SCHEME

SUMMER 2018

**GCSE (NEW)
MATHEMATICS - NUMERACY
UNIT 1 - INTERMEDIATE TIER
3310U30-1**

INTRODUCTION

This marking scheme was used by WJEC for the 2018 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 2018 MARK SCHEME

GCSE Mathematics – Numeracy Unit 1: Intermediate Tier Summer 2018	Mark	Comment										
1(a) 57.5 (miles)	B1											
1(b) Method, e.g. 4×230 , 8×115 , or equivalent 920 (miles)	M1 A1	FT 16 $\times$ 'their 57.5' Useful FT information: <table border="1"><thead><tr><th>FT</th><th>Miles</th></tr></thead><tbody><tr><td>55</td><td>880</td></tr><tr><td>56.5</td><td>904</td></tr><tr><td>58.5</td><td>936</td></tr><tr><td>59.5</td><td>952</td></tr></tbody></table>	FT	Miles	55	880	56.5	904	58.5	936	59.5	952
FT	Miles											
55	880											
56.5	904											
58.5	936											
59.5	952											
2(a) $2 \times 5.60 + 2 \times 2.30$ (£) 15.80 (£) 4.20	M1 A1 A1	FT 20 – 'their 15.80' correctly evaluated provided M1 awarded <i>Alternative:</i> $20 - 2 \times 5.60 - 2 \times 2.30$ (£)4.20 Ignore if working with both columns, but only award final A1 if unambiguous final answer If no marks, award SC1 for an answer of (£)1.9(0) from including charge for Anton (under 3), or (£)2.14 from incorrect column used										

2(b) (Adult extra 10% of £5.60 is £) (0.)56 (Adult with extra 10% is £) 6.16 OR (Adult pays too much by) $6.4(0) - 5.6(0) - (0).56$ (Adult pays too much by) 24p or £0.24 Organisation and communication Writing	B1 B1 B1 OC1 W1	Ignore units. (£)1(.).12 implies 56(p) (£)12.32 implies (£)6.16 FT 'their 56p' provided 10% of £5.60 attempted CAO. B0 for 48(p) If units are given they must be correct Penalise units not given in (OC)W 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) Intention to calculate $714\,000 \times 2 \div 7$ $204\,000 \text{ (m}^2\text{)}$	M1 A1	May be seen in stages Sight of $2/7 \times 714\,000$ is insufficient for M1, there must be an intention to $\div 7$ and $\times 2$, e.g. allow from sight of incorrect responses 24000, or 2×12000 Mark final answer

4(a)(i) 10:13	B1	
4(a)(ii) 09:36	B1	
4(b) (Leaves Grainsey at) 13(:)00 or 1p.m.	B4	Allow 13:00 p.m. or 1:00 or 1 o'clock B3 for attempt to add 3 hours onto 10:00 (Do not accept 10:00 + 180) OR Listing 9 further times for bus 6 and 4 further times for bus 7 with at most one error in total (FT with that 1 error to check further times) B2 for sight of result (LCM $2 \times 2 \times 3 \times 3 \times 5$ =) 180 (minutes) or 3 hours OR Listing 7 further times for bus 6 and 3 further times for bus 7 with at most one error in total (FT with that 1 error to check further times) OR Listing 5 further times for bus 6 and 2 further times for bus 7 with no errors. B1 for sight of $20 = 2 \times 2 \times 5$ with $45 = 9 \times 5$ OR for sight of $20 = 4 \times 5$ with $45 = 3 \times 3 \times 5$ OR for sight of $20 = 4 \times 5$ with $45 = 9 \times 5$ OR Listing 3 further times for bus 6 and 2 further times for bus 7 with at most one error in total (FT with that 1 error to check further times) OR Listing 20, 40, 60, ... AND 45, 90, 135, ...

Bus 6	Bus 7
10:20	10:45
10:40	11:30
11:00	12:15
11:20	13:00
11:40	
12:00	
12:20	
12:40	
13:00	

5(a)(i) (£) 20 (£) 30	B1 B1	If B0, B0, award SC1 for (£)30 followed by (£)20
5(a)(ii) 16 (years) 0 (months) 13 (years) 6 (months)	B3	Accept 16 (years) with months left blank throughout B2 for (in order) 16 (years) 0 (months) with 13 (years) 5 (months), or 13 (years) 6 (months) with 16 (years) 0 (months), or 16 (years) 0 (months) with 13½ (years) 0 or 6 (months) B1 for - either answer correct in appropriate statement accept 16 (years) 'blank' (months), or 13 (years) 5 (months) followed by 16 (years) 0 (months), or 13½ (years) 0, 6 (months) followed by 16 (years) 0 (months)
5(b)(i) 13 (years old)	B1	CAO
5(b)(ii) Indicates or implies 'Yes' with a reason, e.g. 'only one young person gets more paid towards their mobile phone bill', 'the 13½ year old (only) gets £27.5(0), 'There are older children that pay less than Lekan', 'only 3 others pay the same or more', 'most pay less', 'only 4 pay more or the same' 'the amount paid for other 13-year olds is less', 'most parents pay less', OR Indicates or implies 'No' with a reason, e.g. 'there is no correlation', 'there is no relationship between age and amount'	E1	Do not accept 'Yes, he is the youngest' Accept 'Yes' with a reasonable true comparison If amounts are quoted they must be correct unless accompanied by a correct comparative statement
6. 112 (grams of butter) 98 (grams of flour) 1704 (millilitres of milk) 252 (grams of cheese)	B1 B1 B1 B1	

9. 49×20 $(= £) 980$ % Interest $\frac{980 - 400}{400} (\times 100)$ or $\frac{980}{400} (\times 100) - 1 (\times 100)$ 145 (%)	M1 A1 m1 A1	FT 'their 980' provided M1 previously awarded Award m1 for complete method to show what percentage 580 is of 400
10(a) 190°	B1	
10(b) 332°	B1	
10(c)(i) $8400 \div 200$ 42 (population/km ²)	M1 A1	Or equivalent CAO
10(c)(ii) $5 \times 8400 \div (3 + 4 + 5)$ 3500 (people)	M1 A1	Full method required Accept embedded answer, provided clearly Gwyndir
11(a) $0.02 \times 3000 + 3000$ (= £3060) or equivalent $0.02 \times 3060 + 3060$ (£)3121.2(0)	M1 M1 A1	Allow for sight of 3060 (irrespective of labelling) or for sight of 3120 (simple interest) FT 'their 3060', mark is for the method (= £61.2(0) + £3060) CAO <i>Alternative:</i> <i>Sight of $1.02^2 \times 3000$</i> M1 <i>1.0404×3000</i> M1 <i>FT 'their 1.0404' incorrectly evaluated</i> <i>(£)3121.2(0)</i> A1 CAO If no marks, award SC1 for (£)2881.2(0) (from depreciation)
11(b) $72 \div 0.8$ or $100 \times 72 \div 80$ (£) 90	M1 A1	Accept an unsupported answer of (£)90 Allow M1, A1 for (£)90 found from trial & improvement

12. (Maximum cup height)12.5 (cm) AND (Maximum gap) 4.5 (cm) OR For use of 12.43 to 12.499... AND 4.43 to 4.499... (Maximum height of 7 coffee mugs is) $12.5 + 6 \times 4.5$ (=) 39.5 (cm) Conclusion or reason, e.g. 'as 39.5 cm > 39 cm) Michelle cannot be certain the mugs will fit'	B1 M2 A1 E1	For sight of 12.5 and 4.5 (ignoring any least measures given) FT 'their 12.5' and 'their 4.5' provided in ranges >12 to 12.5 and >4 to 4.5 respectively Award M1 only (A0) for $12.5 + 7 \times 4.5$ (A0) Depends on at least 2 marks previously awarded FT 'their 39.5' irrespective if <39 or >39 An unsupported 39.5 is no marks as no working shown
13(a) 20 to 25 minutes	B1	
13(b) 'No' indicated or unambiguously implied, with a reason, e.g. 'only shows data for groups', 'it was in the group 40 to 45 minutes', 'doesn't show how many runners finished in 45 minutes', 'the last 2 runners took between 40 and 45 minutes'	E1	Do not accept any reason implying 'Yes' Allow 'No' with, e.g. 'the graph shows the cumulative frequency not the actual times', 'doesn't show the actual times' Do not accept, e.g. 'it goes to the nearest 5 minutes', 'it shows frequency not times of results', 'it doesn't show how many runners finished between 40 and 45 minutes'. 'because it can be an average'
13(c) 70% (within 30 minutes)' (80% within) 35 (minutes)'	B1 B1	
13(d) Difference 26 - 24.5 to 24.8 Answer in the range • 1.2 to 1.5 (minutes), or • 1 minute 12 seconds to 1 minute 30 seconds	M1 A1	Do not accept an answer in the correct range from incorrect working Mark final answer If units are given they must be correct

14(a) 25% of 3000 or 0.25×3000 or equivalent 750 (people)	M1 A1	<i>If no marks, award SC1 for an answer of 2250 (people)</i>
14(b) Idea to consider fraction or decimal part between the median & UQ $\frac{2}{3} \times 0.25 \times 3000$ or equivalent 500 (people)	M1 m1 A1	For example, sight of 10/15 ($= \frac{2}{3}$) or 5/15 ($= \frac{1}{3}$) FT 'their 750' from (a)
14(c) Indicates or unambiguously implies 'North Entrance' with a suitable reason, e.g. 'upper quartile is less than for the South Entrance', '3/4 took less than 44 minutes to queue at the North entrance', North as $\frac{3}{4}$ took less than 60 minutes at the South Entrance', OR Indicates or unambiguously implies 'South Entrance' with a suitable reason, e.g. '25% people in 20 minutes at South entrance compared with 24 minutes at the North entrance'	E1	Do not ignore additional incorrect statements Implies that the majority of people got through quicker at the North Entrance Allow, e.g. 'North Entrance, most people 44 minutes whilst South it was 60 minutes' Do not accept indication of 'South Entrance' with a reason based on the team being slower, e.g. 'time was taken to search of handbags'