GCSE MARKING SCHEME

AUTUMN 2020

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

INTRODUCTION

This marking scheme was used by WJEC for the 2020 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 2020 MARK SCHEME

GCSE *Mathematics Numeracy* **Unit 1: Foundation Tier**	Mark	Comments
1(a) (i) an even chance	B1	
1(a) (ii) 18	B1	
1(a) (iii) 16	B1	
1(b) 8007	B1	
1(c) No and a suitable explanation given indicating that the length of a pool cannot be 25 miles long. Eg No because 25 miles is far too long for a swimming pool No because he means 25 metres for the length of a pool 'No, the pool cannot be 25 miles long' 'No because it's metres not miles' 'No because the pool is 25 metres not miles'	E1	Allow Eg 'No, the pool is not 25 miles long' 'No, because 1 length doesn't equal 25 miles' 'No because the length of a swimming po0l is not 25 miles' 'No because 25 miles would be far too big to swim' Do not accept 'No because we were not given the distance for a length' 'No because we don't know the length of a pool' 'No because there are 15 miles in a length.'
1(d) cylinder	B1	
1(e) (13:30) (13:55) **14:20 14:45** (15:10) **15:35**	B2	Accept times given in 12 hour and/or 24 hour format Award B2 for all 3 times correct Award B1 for 1 or 2 times correct For B1, FT 'their 14:20' + 25 minutes correctly evaluated provided both times lie between 13:55 and 15:10
2(a) 11	B1	
2(b) (size) 8	B1	
2(c) (size) 12	B1	
2(d) No and suitable reason given Eg 'No because you increase by 2 each time' 'No because 5 isn't double 3' 'No, the rule is +2 (not × 2)' 'No, because if you double the circles in size 2 you get 10 which isn't 7 circles in size 3.' 'No because you just add on 2 to the number of circles before it.' 'No because you add the size number + size number + 1' 'No because to get size 3 you add 3 and 4'	E1	Allow 'No because size 1 is 3, size 2 is 5 then size 3 is 7 so it isn't doubling' 'No because it goes up by 2'

3. (Money for national children's charity) 1200 ÷ 3 (£)400 (Money for national animal charity) 20/100 × 1200 (£)240 (Money for each of the 4 charities) 1200 – 400 – 240 (=560) ÷ 4 = (£)140	 M1 A1 M1 A1 M1 m1 A1	 FT 'their stated 400' and 'their derived 240' for possible M1m1A1
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(a) 1140 (calories)	B1	
4(b) Yes and suitable reason given Eg Yes because 5.02 and 5.07 are 5 when rounded to the nearest whole number. Yes because 5.02 and 5.07 are only just over 5 Yes because all runs are about 5km or just over 'Yes, they are all about 5km'.	E1	Allow 'Yes, because they are all under 0.5 and all start with 5' Do not accept the information in the question just repeated, with no inference made. Do not accept: 'No because she ran 3 different routes' 'No because there are no distances higher than the number' 'Yes because it's 5.07, then 5, then 5.02' 'Yes because they are all somewhere in 5km'
4(c) No and suitable reason given Eg 'No because it took her longer to run 5(km) than it did to run 5.02 (km)' 'No, the 5.02km run took the least time' 'No, the shortest run took longer than the 5.02km run' 'No, the shortest run was on Wednesday but the least time was on Friday'	E1	Allow 'No, on Friday she ran for longer and took less time' 'No, 33:46 is the middle time' 'No, 5.02 km is the middle distance'
4(d) 34:03 – 32:52 or equivalent (e.g. 8 seconds + 1 minute + 3 seconds) 1 minute and 11 seconds or 71 seconds	M1 A1	Answers of 1:51, 2:51, 1:49 and 2:49 imply M1 Allow 1:11

5(a) 35˚	B1	
5(b) 53˚ drawn (±2˚) in correct place 78˚ drawn (±2˚) in correct place	B1 B1	If B0, B0 but 53˚ (±2˚) and 78˚ (±2˚) swapped, award SC1
Triangle completed	B1	Award this B1 provided at least one previous B1 or SC1 awarded
Two sides measured correctly (9.5 cm and 11.7 cm)	B2	B1 for each line. Allow ±2 mm. (Range is: 9.3cm to 9.7cm and 11.5cm to 11.9cm) FT their completed triangle **This may be implied by their final answers**
95 (m) and 117 (m)	B1	(Range is 93m to 97m and 115m to 117m) FT 'their measurements' provided a triangle drawn If previous B2 is awarded B0 or B1 then FT for the final B1 for at least one of 'their measurements' × 10 or at least one of 'their measurements rounded to the nearest whole number of cms' × 10 eg for 8.4cm award final B1 for 80 or 82 to 86 *Note: the 2 answers given must correspond in size to the sides of the triangle.*
6. (Cost of strawberries) 20 – 6.8(0) − 1.5 × 4 (£) 7.2(0)	M2 A1	M1 for (Blueberries cost) 1.5 × 4 (=6) Award M2, A1 for appropriate sight of (£)7.2(0) irrespective of any further inappropriate working
(Mass of strawberries) (20 – 6.8(0) − 1.5 × 4) ÷ 3.6 or 7.2(0) ÷ 3.6	M1	In FT allow sight of 14.2(0) as indication of 20 – 6.8(0) attempted Allow convincing appropriate repeated addition FT provided there has been an attempt at a subtraction of the cost of blueberries from 20 – 6.8(0) (=13.2(0)), 20 or 6.8(0) and provided M1 previously awarded, e.g. • (20 – 1.5 × 4) ÷ 3.6 • (6.8(0) – 1.5 × 4) ÷ 3.6 OR FT (20 – 6.8(0) – 'their cost of blueberries') ÷ 3.6 provided 'their cost of blueberries' > (£)4
2 (kg)	A1	CAO. Must be from correct working If no marks, award SC1 for an answer of 3.6(6kg) or 3.67(kg) or 3.7(kg) (from (20 – 6.80) ÷ 3.6) An answer only of 2 kg is awarded all 5 marks (strictly provided no incorrect working seen - this is answer only). Any other answer only, such as '2 bags', is awarded no marks.

7(a) (Total of first year cost is purchase + insurance + food) 450 + 12 × 18 + 7 × 52 (450 + 216 + 364) (£) 1030	M2 A2	Allow food cost of 365 or 366 (from £1 per day) M1 for any one of: • a sum of 2 or 3 of amounts including any two of 450, 12 × 18 and 7 × 52 • 12 × 18 + 7 × n, where n = 48 to 51 inclusive • 450 + 7 × n, where n = 48 to 51 inclusive • sight of 216 **and** 364 or 365 or 366 Use of 365 days leads to (450 + 216 + 365 = £)1031 Use of 366 days leads to (450 + 216 + 366 = £)1032 A1 for sight of 450 + 216 + 364 or sum using 365 or 366 days FT from M1 for possible A2 (summing all 3 costs) with use of food costs for 48 to 51 weeks inclusive: • 48 weeks leads to (450 + 216 + 336 = £)1002 • 49 weeks leads to (450 + 216 + 343 = £)1009 • 50 weeks leads to (450 + 216 + 350 = £)1016 • 51 weeks leads to (450 + 216 + 357 = £)1023 or A1 for sight of the sum of 3 appropriate amounts (as given above), with products correctly evaluated OR FT from M2 or M1 for A1 for their final answer from a correctly evaluated sum in which at least 2 of the 3 amounts are correct. *Strict FT for adding their 3 amounts correctly or if they only have 2 amounts, adding their 2 amounts correctly*
7(b)(i) 25 ÷ 2.5 or 30 ÷ 2.5 OR for sight of 2.5 × 10 or 2.5 × 12 10 (inches) 12 (inches)	M1 A1 A1	Allow for sight of repeated addition, 10 or 12 lots of 2.5 to be added Either of the correct responses implies M1 If M1, A0, A0 also award SC1 if 'their 12' - 'their 10' = 2 Answer line takes precedence. An answer needs to be selected for A marks to be awarded, however if M1, A0, A0 awarded, also award SC1 for sight of 2.5 × 10 = 25 **and** 2.5 × 12 = 30
7(b)(ii) 6 × 2.2 or 8 × 2.2 13.2 (pounds) 17.6 (pounds)	M1 A1 A1	Either of the correct responses implies M1 If M1, A0, A0 also award SC1 if 'their 17.6' - 'their 13.2' = 4.4 Answer line takes precedence.
8. (x =) 110(°) (y =) 115(°) (z =) 73(°)	 B1 B1 B1	Mark answer space if completed, otherwise check diagram FT 'their 115(°)' – 42(°) correctly evaluated, i.e. check 'their y' - 'their z' = 42
9.(a) 1	B1	
9.(b) 2	B1	

10(a) (Cost of flags 4 × 40 =) 160(p) (Cost of muffin cases) (12 × 4 ÷ 16) × 22 or 3 × 22 (=) 66 (p) (Cost of ingredients) (12 × 4 ÷ 6) × 25 or 8 × 25 (=) 200 (p) (Money taken in selling 12 × 4 × 30 =) 1440(p) (Profit) 1440 – 160 – 66 – 200 (= 1440 – 4.26) 1014(p) or (£)10.14	 B1 M1 A1 M1 A1 B1 M1 A1	Shown in pence, accept in £. However, if units are incorrect penalise – 1 once only, unless corrected in further work *Mark final answers at each stage (then possible FT)* Accept use of 'their derived number of flags' as 'their 48 (4×12) flags' FT their consistent number of flags for all marks, then penalise -1 if 'their derived number of flags' ≠ 48 If previous M0, M0 award SC1 here for sight of any one of the following: • (number of packs of muffin cases) 12×4÷16 **and** (number of multiples of ingredients) 12×4÷6 • (number of packs of muffin cases =) 3 • (number of multiples of ingredients =) 8 FT the following: • 'their 160', provided from an attempt at 4×40, • 'their 1440', provided from an attempt at 12×4×30, • 'their 66' and 'their 200' provided at least 1 M1 mark has previously been awarded If units are given they must be correct
10(b) $\frac{400 - 80}{80}$ (× 100) or equivalent 400 (%)	M1 A1	
11(a) Unambiguously stating or implying 'No' with a reason, e.g. 'all scattered' 'no relationship',	E1	If a satisfactory reason is given ignore any further spurious comments Allow, e.g. 'no pattern', 'no trend', 'no steady plotted points', 'you can't draw a line of best fit', 'no steady line', 'they are not in a line', 'random points', 'points all over the place', 'plots are everywhere', 'no link' Do not accept, e.g. 'no correlation' 'there were lots of birds in the garden when the wind speed was low and high', 'too many outliers', 'spread far apart'
11(b) 7 (birds)	B1	