UNIT 2: CALCULATOR-ALLOWED, FOUNDATION TIER
GENERAL INSTRUCTIONS for MARKING GCSE Mathematics - Numeracy

1. The mark scheme should be applied precisely and no departure made from it. Marks should be awarded directly as indicated and no further subdivision made.

2. Marking Abbreviations
The following may be used in marking schemes or in the marking of scripts to indicate reasons for the marks awarded.
cao = correct answer only
MR = misread
PA = premature approximation
bod = benefit of doubt
oe = or equivalent
si = seen or implied
ISW = ignore subsequent working

F.T. = follow through ($\sqrt{}$ indicates correct working following an error and $\cancel{\times}$ indicates a further error has been made)

Anything given in brackets in the marking scheme is expected but, not required, to gain credit.

3. Premature Approximation
A candidate who approximates prematurely and then proceeds correctly to a final answer loses 1 mark as directed by the Principal Examiner.

4. Misreads
When the <u>data</u> of a question is misread in such a way as not to alter the aim or difficulty of a question, follow through the working and allot marks for the candidates' answers as on the scheme using the new data.
This is only applicable if a wrong value, is used consistently throughout a solution; if the correct value appears anywhere, the solution is not classed as MR (but may, of course, still earn other marks).

5. Marking codes

- 'M' marks are awarded for any correct method applied to appropriate working, even though a numerical error may be involved. Once earned they cannot be lost.

- 'm' marks are dependant method marks. They are only given if the relevant previous 'M' mark has been earned.

- 'A' marks are given for a numerically correct stage, for a correct result or for an answer lying within a specified range. They are only given if the relevant M/m mark has been earned either explicitly or by inference from the correct answer.

- 'B' marks are independent of method and are usually awarded for an accurate result or statement.

- 'S' marks are awarded for strategy

- 'E' marks are awarded for explanation

- 'U' marks are awarded for units

- 'P' marks are awarded for plotting points

- 'C' marks are awarded for drawing curves

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GCSE Mathematics – Numeracy Unit 2:Foundation Tier	Mark	Comment
1. (a) <table><tr><td>**Item**</td><td>**Cost**</td></tr><tr><td>Pair of gloves</td><td>(£22.49)</td></tr><tr><td>3 water bottles</td><td>(£) 18.36</td></tr><tr><td>Pair of shoes</td><td>(£) 79.95</td></tr><tr><td>2 pairs of shorts</td><td>(£) 81(.00)</td></tr><tr><td>Total</td><td>(£)201.8(0)</td></tr></table>	B4	B1 for each correct answer F.T. if no more than one error
(b) (£)201.8(0) $\frac{5 \times (£)201.8(0)}{100}$ or equivalent	M2	F.T. 'their total from (a)' M1 for sight of $\frac{5 \times (£)201.8(0)}{100}$ or equivalent or (£)10.09
(£)191.71	A1	Accept rounded or truncated answers to 2dp from F.T . F.T. 'their 201.8(0)' – 'their 10.09' provided of equivalent difficulty
	7	
2. Arrow drawn or indicated to 530 (grams)	B3	Accept indication between 520 and 540 exclusive Award B2 for sight of 350 + 180 (=530) OR correct evaluation indicated on diagram of 350 + 'their 180' Award B1 for sight of 180 OR for 350 + 'their 180' e.g. 350 + 190 (=540) or 350 + 140 (=490)
	3	
3.(a) Apples **15**(kg) Total to females **28**(kg) Females **4**(kg) more grapes than males	B1 B1 B1	
(b)(i) Explanation, e.g. 'she only looked at the highest bar for the males'	E1	
(ii) Grapes 20(kg), bananas 18(kg), (apples 15kg) Most popular stated as grapes	M1 A1	Totals for grapes and bananas correct
	6	
4. (a) <table><tr><td>**Subject**</td><td>**Result as a percentage**</td></tr><tr><td>Mathematics</td><td>74%</td></tr><tr><td>Welsh</td><td>70(%)</td></tr><tr><td>Science</td><td>75(%)</td></tr><tr><td>English</td><td>67(%)</td></tr></table>	B3	Award B1 for each correct answer
(b) Science	B1	FT their completed table of percentages in (a)
	4	
5(a) 1200 (metres) 900 (metres) 1.5 (furlongs)	B1 B1 B1	
(b) Explanation with calculations given	E1	
2000 (metres)	B1	
	5	

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6. (Perimeter=) 12 + 9 + 12 + 9
 	
                     = 42 (m)
(Number of panels =42 ÷ 3 =) 14
(Cost =) 14 × (£)21.98
                       =(£)307.72
 	
Organisation and communication
Accuracy of writing
	M1
	A1
	B1
	M1
	A1
	
	OC1
	W1
	
	7
		
		F.T. their perimeter
		F.T. their number of panels
		
		Alternative method: dividing by 3 to get
		no.of panels on 1 side B1
		4 + 3 + 4 + 3 M1
		(Number of panels =)14 A1
		Cost 14× (£)21.98 M1
		(£)307.72 A1
		Award SC3 for unsupported answer of
		(£)153.86

7. (a)(i) £3.60
    (ii) £3.51
 	
(b) ⅗ × 1.8(0) or 1.8(0) - ⅖ × 1.8(0) or equivalent
                        (£)1.08
 	
(c) (0.4 × 3.4(0) =)   (£)1.36 (cost of grapes)
(0.5 kg peaches is 3.46 – 1.36 =)   (£)2.1(0)
       1kg of peaches   (£)4.2(0)
	B1
	B1
	
	M1
	A1
	
	B1
	B1
	B1
	7
		
		FT 'their derived cost of grapes', not £3.40
		FT provided previous B mark awarded

8. FALSE FALSE FALSE TRUE FALSE	B2 2	B1 for any 4 correct
9. (Package) B (Package) G	B2 B2 4	*May be given in any order.* (Both of these fail on one of the preferred conditions). B1 for A or H chosen. (Fails on two conditions). B0 for C or F chosen. (All fail on three of the conditions) B0 for D and E. (Both fail on a definite requirement).

10.   C
       B
       A
       D
	B3
	
	3
		B3 for all 4 correct
		B2 for 2 or 3 correct
		B1 for 1 correct

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11. (a) Old tablet:
(Loss) 0.35 × 240
(Selling price=) 240 − 0.35 × 240
                        (£)156
(New tablet costs=) 365 – 0.2 × 365 or 0.8 × 365
                        (£)292
 (Extra money needed)(=292 – 156)
                        (£)136
 	
(b)   C
	M1
	m1
	A1
	M1
	A1
	
	B1
	
	B1
	7
		
		OR M2 for 0.65 × 240
		
		FT 'their 156' provided M1 awarded for loss, and 'their 292' provided M1 awarded for new tablet cost
		SC1 for (£)209 (discount for special offer not considered)

12. Sight of $\frac{(100 + 40)}{2}$ × *BC* or equivalent
 	
$\frac{(100 + 40)}{2}$ × *BC* = 3500
 	
        BC = 2 × 3500 / 140
 	
             = 50(m)
	B1
	
	M1
	
	A1
	
	A1
	4
		For a correct expression for the total area of *ABCD* in terms of *BC*.
		F.T. their area only if in terms of *BC* and is dimensionally correct.
		For equating their expression for area, in terms of *BC*, with 3500.
		Further F.T. only if of equivalent difficulty

13. (a) Considering multiples of 18 and 24, e.g. sight of 18, 36, 54, .. AND 24, 48, 72, .., OR
Looking at factor of 18 and 24, e.g. sight of 2×9 AND 2×12 or 2×3×3 AND 2×2×2×3 or other partial factorising
 	
Correct list of multiples of 18 to at least 72, or multiple 72 AND
Correct list of multiples of 24 to at least 72, or multiple 72 , OR
Sight of 2×3×3×4
 	
Sight of 72 (as common multiple or number of minutes)
 	
Consideration of 16½ hours compared to 72 minutes, e.g. 990/72
Final time 06:00 add13×72 minutes
      (or 936 mins = 15.6 hr=15 hrs 36 mins)
          21:36
	S1
	
	M1
	
	A1
	
	M1
	
	m1
	
	A1
	6
		At least 3 correct multiples for both
		
		18, 36, 54, 72
		24, 48, 72
		
		OR 1 hour 12 minutes
		FT time from 06:00 for their number of minutes provided S1 and M1 awarded