

MATHEMATICS - NUMERACY 2nd SAMs 2017 Unit 2 (Calculator allowed) Foundation Tier	Mark	MARK SCHEME Comments (Page 1)
1. (a) Cabbage 8, Peas 13, Sprouts 6, Broccoli 3 Both axes labelled, e.g. frequency or number of people along one axis and Cabbage, Peas, Sprouts, Broccoli along the other axis (or on the bars), anywhere within the base (inc) of the corres. bar AND uniform scale for the frequency axis starting at 0. Four bars at correct heights (bars must be of equal width). Can be in any order. (b) Suitable reason given linked to organising and/or collecting her data in a methodical way. (c) Peas (d) 3/30 or equivalent	B2 B2 B2 E1 B1 B1 9	May be inferred from their bar chart. B1 for any two/three correct frequencies. If frequencies score 0, then give B1 for all 4 correct tallies. B1 if no scale but allow one square to represent 1 OR B1 if not labelled as 'frequency' or similar. If frequency scale starts with 1 at the top of the first square the starting at 0 will be implied for this axis. <u>Condone frequency values alongside square instead of at the top of the squares.</u> FT their frequencies throughout. FT their scale. B1 for any 2 or 3 correct bars on FT. ISW
2. (a) 6 rectangles, measuring 6cm by 8cm, correctly drawn or stated. (b) $120 \div 6$ 20 (pieces of card)	B2 M1 A1 4	Award B1 for 2, 3, 4 or 5 rectangles correctly drawn. FT their number of rectangles.
3. (earnings) $(32 \times 6.50 =) (\pounds)208$ (Tax & NI) $(1/10 \text{ of } 208 =) (\pounds)20.8(0)$ (Total outgoings) $(20.8(0) + 50 + 60 =) (\pounds)130.8(0)$ (Has left) $(208 - 130.8(0) =) (\pounds)77.2(0)$ (Number of weeks) $(419 \div 77.2(0) = 5.427...) 6$ Organisation and communication Accuracy of writing	B1 B1 B1 B1 B2 OC1 W1 8	CAO FT 'their 208' FT 'their 20.8(0)' FT 'their 130.8(0)' B1 for 5(.427) weeks. FT 'their 77.2(0)' for equivalent difficulty <i>Alternative method</i> Earnings = 208 B1 Tax = 20.80 B1 $(208 - 20.80 =)187.20$ B1 Has left 77.20 B1 FT 'their 187.20' - 50 - 60 Number of weeks = 6 weeks B2 FT their 77.2(0) B1 for 5(.427) weeks
4. (a) (area =) 45×25 1125(m²) (Cost =) $1125 \times (\pounds)85$ (£) 95625	M1 A1 M1 A1 4	FT 'their area' If no marks awarded, award SC2 for sight of (£)11900 OR award SC1 for $\times 85$ correctly
5. $4 \frac{1}{2} \times 40 = 180$ (Cooking time =) 180 mins (or 3 hrs) + 25 mins = 205 mins or 3 hours 25 mins (Chef begins cooking at) 10.05 (am)	B1 M1 A1 B1 4	FT 'their 180' FT their cooking time

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6. Use of 30 teabags (for £1.80) Method to compare, e.g. multiples of 30 & 40: 30, 60, 90, 120 & 40, 80, 120 $4 \times 1.8(0)$ and 3×2.60 (£)7.2(0) and (£)7.8(0) or equivalent Offer A (20 teabags + 50% free) is better value	B1 M1 m1 A1 E1 5	OR equivalent, e.g. 1 or 10 teabags considered for both bags of 30 & 40 OR $1(.)80 \div 3(0)$ and $2(.)60 \div 4(0)$ with consistent place value to compare OR 60(p for 10) and 65(p for 10) with consistent place value to compare OR 60(p for 10) and (£) $2(.)60 - (£)1(.)80 = 80p$ for extra 10 OR 2.40 for 40 OR $1.80 \div 30 \times 40$ OR $1.80 \div 3 \times 4$ OR 60(p) for 10 and 80(p) for extra 10. Depends on M1, m1 awarded with appropriate FT Accept answers suggesting 'depends if you need 40 teabags exactly' etc. provided M1, m1, A1 previously awarded. <i>SC1 for an answer based on comparison of 20 teabags for £1.80 with 40 teabags for £2.60, appropriate working with conclusion of 40 teabags</i>
7.(a) 150 (b) 325	B1 B1 2	
8.(a) $7\text{cm} (\pm 0.2\text{cm}) \times 8 (\div 100)$ 0.56 (m) (b) Measuring 2 appropriate angles ($\pm 2^\circ$) to check interior (allied), or appropriate corresponding or alternate angles Conclusion based on the angles measured and accurate knowledge of parallel line angle facts.	M1 A1 B1 E1 4	Award M1 only for answers 56cm or 56m or 56 or similar from $\pm 0.2\text{cm}$ tolerance The size of angles may not actually be recorded, e.g. on diagram equal angles marked x and y. Accept references to the angles which are equal or sum to 180° Do not accept 'travelling in the same direction so won't meet'

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9.(a) £480 (b) £1620 (c)(i) Paying for 10m 11×1mth (11×10×40×1.2 =) (£)5280 AND 12mth charge (320×10×1.2 =) (£)3840 6mth + 5×1mth 180×10 + 5×40×10 (×1.2) (£)4560 Conclusion to pay annual charge based on the calculation of all 3 possibilities (ii) Greatest saving (£5280 - £3840 =) (£)1440	B1 B1 B1 B2 M1 A1 E1 B1 9	 <i>If not awarded, FT use of 9m throughout</i> B1 for either correct, or if neither correct award for excluding VAT charges of (£)4400 and (£)3200 respectively Accept excluding VAT (£3800) FT appropriate conclusion depending on the sight of any two of the 3 correct charges given including VAT <i>If misread not using 'per metre' consistently, hence MR-1, then B0, then FT throughout</i> FT their least of 3 possibilities subtracted correctly from their greatest of 3 possibilities
10.(a) 5.5 (metres) (b) Intention to read horizontal scale for depth of 3m filling 36 (minutes) (c) 13(:)36 or 1 36 pm AND 18(:)36 or 6 36 pm (d) 4 th statement identified	B1 M1 A1 B2 B1 6	Accept answers in the range 5.4 to 5.6 inclusive Accept sight of 0.6 (hours) B1 for either correct, or B1 if both given with incorrect time notation or B1 for two times given that are 5 hours apart e.g. 14:36 and 19:36, i.e. FT 'their first time' + 5 hours for second B1. B0 if more than one statement identified.
11.(a) $9 \times 10 + 160 = 250$ or equivalent 50(°F) (b) $9c = 5f - 160$ $c = \frac{5f - 160}{9}$ or $c = \frac{5(f - 32)}{9}$	M1 A1 B1 B1 4	FT until 2 nd error
12. (a)(i) 253(°) (ii) $360 - 42$ $= 318(°)$ (b) 60° with construction arcs (30° by) bisecting 'their angle', with arcs shown Correct 30° from appropriate construction with line shown at the right hand end of the given line	B1 M1 A1 M1 M1 A1 6	 <i>SC1 for answers of 073(°) and 138(°) in (i) and (ii)</i> Accept anywhere on the line <i>Allow sight of construction arcs for 60°</i> Line (road) may not be shown Depends on both M marks