MATHEMATICS - NUMERACY 2nd SAMs 2017 Unit 1 (Non-calculator) Intermediate Tier	Mark	MARK SCHEME Comments (Page 1)
1. (a) (Total wage for 10 people) 10 × 280 (Wage of each of the other 9 people =) (2800 – 1000) ÷ 9 (£)200 Median AND modal wage (£)200	M1 m1 A1 B1	(£2800) FT 'their 2800' FT 'their derived 200'
(b) Inserts £200 **and** gives a reason relating to 'median' or 'mode' including a related statement such as 'the most common' or 'the middle value'	E1 5	Needs sight of intention of reference to the median and / or mode Only award if clearly linked to evidence of understanding of the average selected. Accept a reason justifying the selection of 'mode or median' or 'not the mean'.
2.(a) 11:30 (b) 12 minutes (c)(i) 17:37 train selected at Blaenau Ffestiniog, (Arrives 18:35 Llandudno Junction,) **and** Departs Llandudno Junction at 18:39 Arrives in Rhyl at 18:55 17:37 ➔ 23 (minutes) + 55 (minutes) ➔ 18:55 or 78 (minutes) 1 hour 18 minutes Organisation and communication Accuracy of writing (ii) 19:12 AND reason e.g. catches the next train (at Llandudno Junction at 18:53)	B1 B1 M1 A1 M1 A1 OC1 W1 E1 9	 Needs sight of 17:37 train and 18:39 train May be implied Or alternative method to find the time difference e.g. using the durations given in the timetables, 58 + 4 + 16 (= 78 mins) etc
3. Correct rooms allocated to (Sasha and Mia), (Mr & Mrs Jones), (Flavia), (Mr & Mrs Evans), (Morys & Ifan), (Heledd) and (Mr & Mrs Igorson).	B4 4	*There are several acceptable combinations.* B4 for all 7. B3 for 6. B2 for 5. B1 for 4.
4. (a) 7 × 99p worked as 7×£1 – 7×1p 5 × £3.95 worked as 5×£4 – 5×5p 3×£7.50 – 3×1p or 3×£7 + 3×50p – 3×1p Total (£)49.15 or 4915p (b) Wrong change, should be 85p	 B1 B1 B1 B1 B1 5	Accept equivalent simple methods involving compensation from rounding with multiplication or any valid multiplication method throughout, but not repeated addition Allow £49.15p. Answer in (a) or (b) FT provided less than £50 and of equivalent difficulty.

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5.(a) Reason e.g. 'fair comparison', 'doing survey the same way'	B1	
(b) (i) Name: Shaun Length in range 10.3 to 10.5(cm)	B1	
(ii) Shaun with a reason, e.g. 'Shaun because (positive) correlation', 'Shaun because leaves are similar', 'Shaun as there is a connection between length and width'	B1	
(iii) Reasonable straight line of best fit	B1	Points above and below following trend
(iv) Width in the range 6.8 to 7.5 cm	B1 5	OR correct reading from their line of best fit
6.(a) Use of × 48 ÷ 4 or × 12 OR realising 55g is 2oz	B1	
(12 × 55) ÷ 110 × 4 OR 2 × 12 OR equivalent 24 (ounces)	M1 A1	(2 oz for 4 pancakes, so 2 × 12)
(b) 150 fl oz = 150 × 25 (ml) (=3750 ml)	M1	
1 pancake 37.5 / 4 (= 9.375) ml water, or notices 3750 is 100 × 'amount given in recipe'	M1	OR 3750 ÷ 37.5 = 100
(3750 / 9.375 OR 100 × 4 =) 400 (pancakes)	A1 6	
7. Attempt at unit cost e.g. for 100ml or 1ml, OR 1(.)28 / 8(00) with 45 / 3(00) or similar, OR looking to equate volumes, OR looking to <u>almost</u> equate volumes no more than 100ml difference, e.g. by looking at 3×300ml with 800ml, or 2×800ml with 5×300ml.	S1	e.g. Idea of doubling or halving to equate, each done more than once. Method that would lead to a correct equate or comparison, e.g. for 300ml, 1200ml, 2400ml, …
Large bottle 16(p) per 100ml or 0.16(p) per 1ml.	B1	OR 2.4l costs (£)3.84 or 1.2l costs (£)1.92
Small bottle 15(p) per 100ml or 0.15(p) per 1ml.	B1	OR 2.4l costs (£)3.60 or 1.2l costs (£)1.80
Better value statement, conclusion small bottle.	E1 4	E mark is dependent on conditions: EITHER Award provided B1 and B1 awarded, OR Award as FT from their logical conclusion provided at least B1 awarded, ignoring further incorrect processing within a final statement, OR Award provided S1 awarded for conclusion from comparison with correct calculations and correct difference in price for stated extra volume, e.g. '(900ml in) 3 small bottles (is £1.35) which is better value because you get 100ml more (than a large bottle) for 7p more'

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8.(a)(i) 4.5(00 m) (ii) 3000 × 700 with an attempt to change units 2.1 (m^2) (b) 60 × 70 × .... = 420 000 100 (cm) (c) Sight of maximum length of worktop(s) 301.5(cm) or 603 (cm) Sight of minimum length of wall 602.5(cm) Problem caused by 603(cm) worktop along wall (only) 602.5(cm) long Difference in measurement is 0.5 cm	B1 M1 A1 M1 A1 B1 B1 E1 B1 9	 Attempt to change units needs evidence of $\div 10^n$ where n≥3 Or equivalent method .
9.(a) Shows understanding that the pie charts don't show how many computers were sold (b) Top right graph	E1 B1 2	
10.(a) 45.4 cm (b) $(x - 1) \times 1.6 + 13.4 = 61.4$ OR $x = \frac{61.4 - 13.4}{1.6} + 1$ 31 (cartons)	B1 M2 A1 4	 Accept equation where x is the number of stacked cups (excluding the bottom one), provided 1 is added at the end. M1 for $1.6 \times x + 13.4 = 61.4$ (omitting +1), or $x = (61.4 - 13.4) / 1.6$, or M1 for an equation that would be correct apart from missing brackets, or M1 for correct equation expressed in words. *Accept missing brackets if implied by a correct response.* If no marks allow SC1 for 31 (cartons). *Alternative method (using answer to (a)):* *$(x - 21) \times 1.6 = 61.4 - 45.4 = 16$ M1* *$x - 21 = 10$ M1* *$x = 31$ A1*
11.(a) Measuring a distance slightly greater than the direct distance between White Castle and Skenfrith Castle. Approximate answer for 11 ÷ 'their measured distance'. Reasonable answer from appropriate calculation (b) 065 ° 197 ° (c) One of the appropriate perpendicular bisectors ±2° shown X indicated, with both correct perpendicular bisectors ±2°	M1 M1 A1 B1 B1 M1 A1 7	 FT their measured distance in cm. FT from M0, M1 Allow a tolerance of ±2°.

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12.(a) [15 + 10 × 2 + 15 × 0.20] × 2 (£)76	M1 A1	Intention to × 2, however brackets may be missing
(b)(i) e.g. x 2 to account for 2 people working	E1	
(ii) Sight of 10 × h OR (0).2 × m OR m / 5	B1	Or equivalent in pence throughout
T = 2(15 + 10 h + 0.2m) or equivalent	B2	B1 for (T =) 15 + 10 × h + (0).2 × m (× 2), i.e. missing brackets or partially in brackets OR (15 + 10 × h + (0).2 × m) × 2 with any 2 of the 3 terms within the brackets correct
(c) Explanation, e.g. '60×20p is more than the cost per hour', or '£12 paying for an hour charged by the minute, but £10 for the hour', '55×20p (=£11) is more than the cost per hour', or 'between 51 and 60 minutes cost more than an hour', or similar	E2 8	E1 for an attempt to calculate the charge for 1 hour 55 minutes
13.(a) April Reason, e.g. greatest range, or greatest interquartile range	E1	
(b) TRUE FALSE TRUE TRUE FALSE	B2	B1 for any 4 correct
(c) States or implies 'not possible to tell' with a reason, e.g. ' can't tell as it doesn't give any information about how much rain fell', or 'just the difference between maximum and minimum not how much rain fell', or 'don't know as the difference between UQ & LQ doesn't give the actual amount of rain, just a range for the middle 50%' 4	B1	

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14.(a) Yellow Party Taxable income (55000 – 5000=) (€)50000 AND (10% tax to be paid on (€)10000 =) (€)1000	B1	
(25% tax to be paid on (€)20000=) (€)5000 AND (50% tax to be paid on (€)20000=) (€)10000	B1	FT 50% of ('their 50000' – 30000)
Yellow Party Tax to pay (€)16000	B1	CAO
Orange Party Taxable income (55000 – 10000=) (€)45000 AND (20% tax to be paid on (€)20000 =) (€)4000	B1	
(40% tax to be paid on (€)25000=) (€)10000	B1	FT 40% of ('their 45000' – 20000)
Orange Party Tax to pay (€)14000	B1	CAO
Orange Party (€)2000 (less to pay)	B1	FT their subtraction provided at least B2 awarded in each tax calculation.
(b) Reason, e.g. 'most of his earnings taxed at 40% rather than at 50%'	E1	The reason must focus on the 40% and 50% comparison. Do not accept 'pays less tax' without an explanation.
	8	