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NCFE Level 2 Functional Skills Qualification in Mathematics (603/5060/X)

Mark scheme: Practice P001270
v1.1

Examiner Mark Scheme Guidance

Information

This guidance is intended to support NCFE examiners in the valid, reliable and consistent application of the relevant mark scheme version, against learner evidence generated during their external assessment.

This mark scheme provides:

- the total marks available for each question
- the subject content reference for each mark
- example process/methods and evidence of the types of responses expected for each mark
- (once confirmed) the pass mark for the relevant assessment version.

This mark scheme **must** be used for paper-based and online marking of the assessment version indicated**.**

Instructions and guidance on application

- All learners must receive the same treatment and should be marked fairly. Examiners must mark the first learner in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Learners must be rewarded for what they have shown they can do rather than penalised for things they have not done.
- Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Half marks must not be awarded.
- Examiners should be prepared to award zero marks if the learner's response is not worthy of credit according to the mark scheme.
- The mark scheme is a working document and may be added to at the standardisation to reflect valid alternative answers given by a learner.
- When in doubt regarding the application of the mark scheme to a learner's response, the Chief Examiner must be consulted.

This mark scheme provides the following information:

- section and activity information
- question number
- total marks available per question (top row, shaded) followed by
- attribution of individual marks per question
- problem solving (PS) and underpinning skill (UPS) attribution
- process/method or answers, as well as additional or alterative evidence; indicative of the subject content (SC) attribution
- any additional guidance, as required.

To support the valid, reliable and consistent marking of learner evidence, the following abbreviations are applied throughout the mark scheme:

Annotation	Explanation and use
FT	Follow through marks are applied when there are earlier mistakes in the method.
OE	Or equivalent marks are available for the justification of the answer being presented in a different form to the mark scheme i.e. 0.5 or ½.

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CAO	Correct answer only.
Their	'Their' refers to the learners' own values.
Seen	Seen refers to the requirement to see the stated value in the learner's response or working out.
Imp	Implied refers to the learner's response implying correct working out used but not seen.
Brackets	Indicates units are not required on final answers or for answers seen within working.
BOD	Benefit of doubt where learner handwriting may be difficult to interpret but previous working may indicate correct final answer.
Shaded	Indicates requirements for full marks to be awarded.

Version Control

Mark schemes are subject to version control. Examiners **must** ensure they have access to the latest version following each standardisation event.

Over time mark schemes will incorporate additional evidence captured and confirmed during standardisation events. Any additional evidence criteria will be captured in colour-coded text applicable to the dated standardisation event.

Note: Pass marks for Functional Skills external assessments are set in an awarding meeting, in which a combination of statistical analysis and professional judgement is used to determine the minimum required standard to achieve a pass in the assessment.

While different versions of the same assessment are designed to be of the same level of difficulty, variations in content can lead to the minimum required standard being represented by different marks across versions.
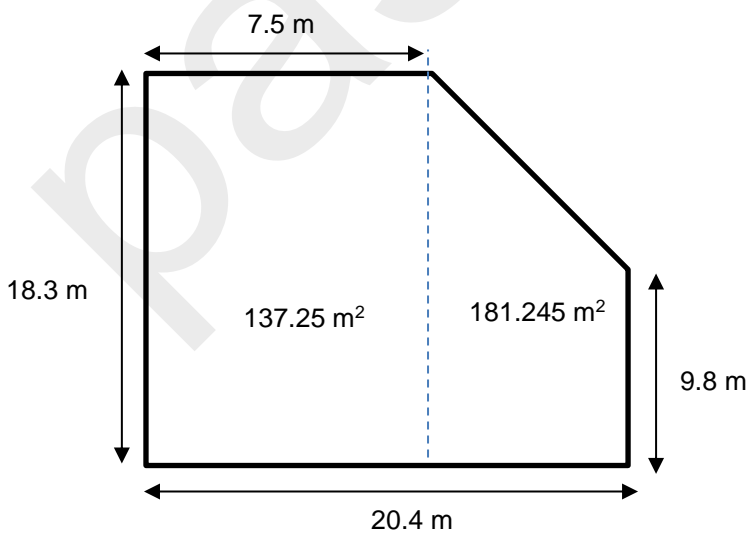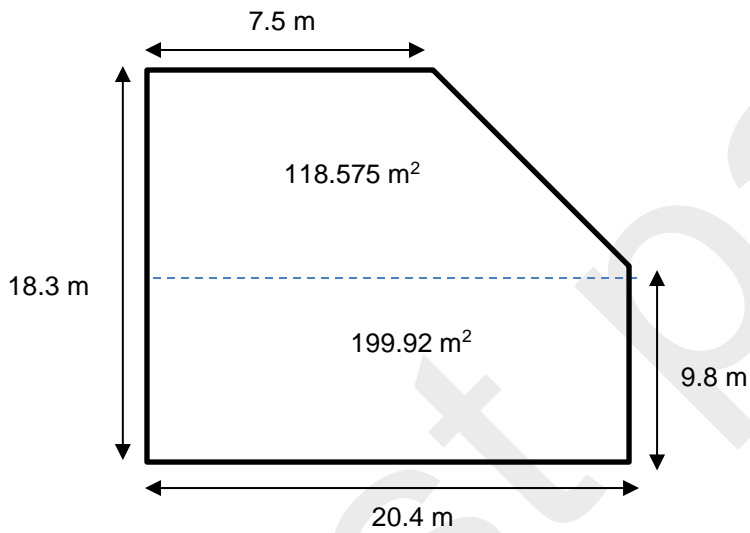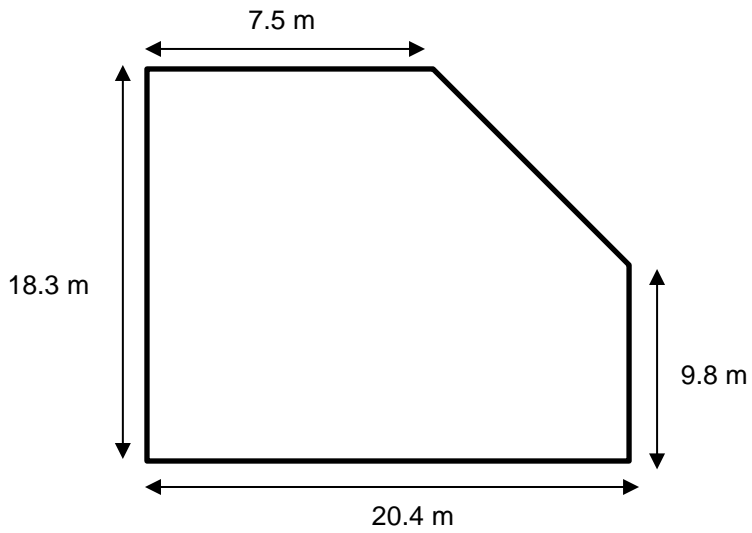
Paper number:	P001270			Version:	1.1	Pass mark:	35

(Section A) Activity 1:   **Buying and Selling**   **(Non-calculator Test)**

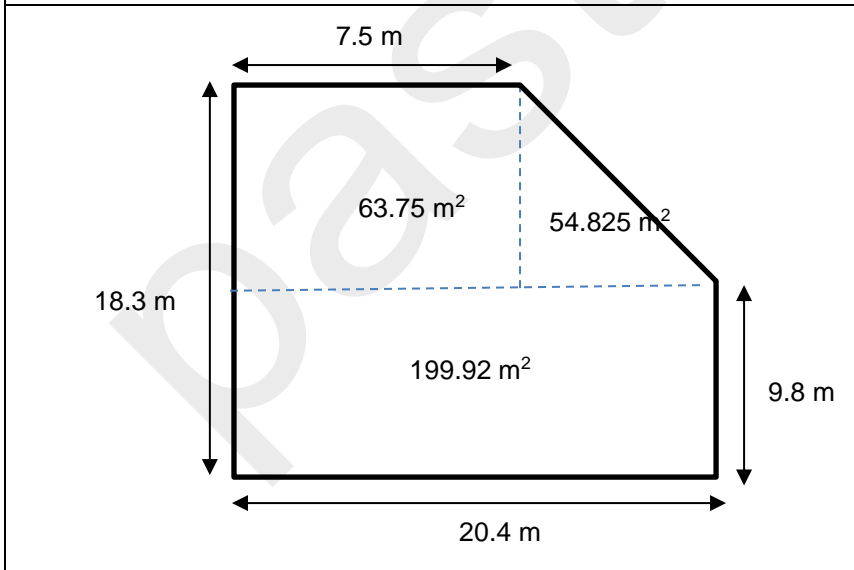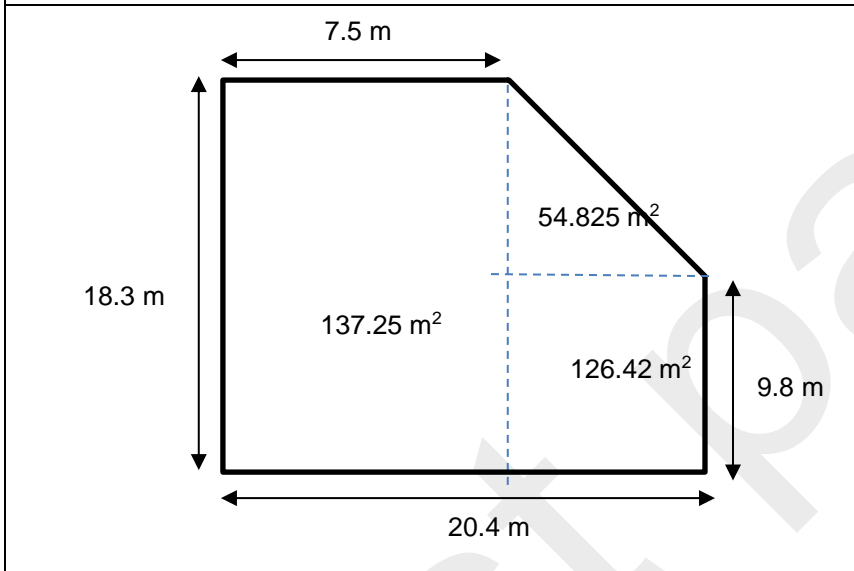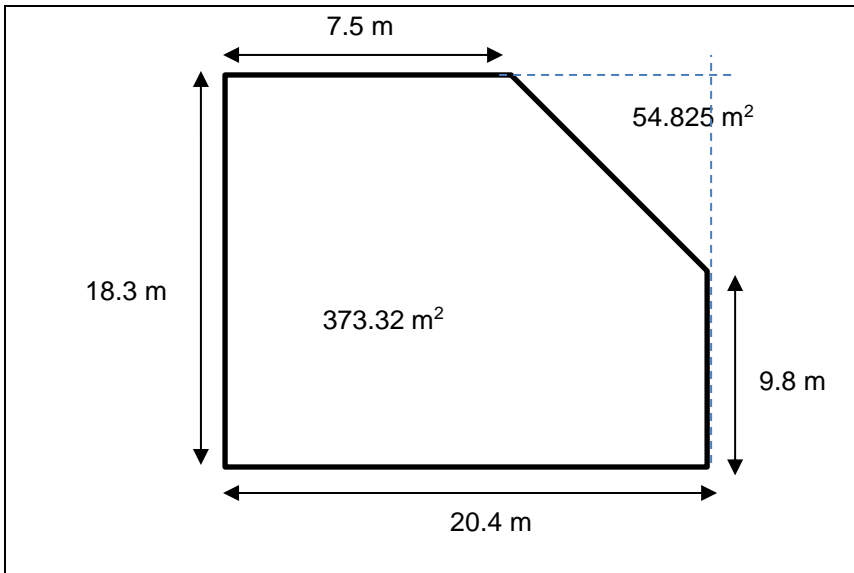| Q	Marks	UPS / PS	Process and Answer	Additional or Alternative Evidence (with guidance)	SC
1 (a)	**2**	**UPS**	(£)0.90 or 90p Profit	Award 2 marks if correct answer given	
	1		(2.85 + 4.95 + 2.70) − (5.35 + 4.25) 0r 10.5(0) − 9.6(0)	OE	M13a
	1		(£)0.90 or 90p Profit	CAO implies 1st mark	N1b
1 (b)	**3**	**PS**	(£)182.13	Award 3 marks if correct answer given	
	1		0.175 × 155 or 1.175 × 155 or 27.125 or (155 ÷ 10) + (155 ÷ 20) + (155 ÷ 40)	OE Full correct method for finding 17.5% or 117.5% of 155	M13b
	1		$$\begin{array}{cccccc} & & 1 & 1 & 7 & 5 \\ & & & 1 & 5 & 5 \\ \hline 1 & 1 & 7 & 5 & 0 & 0 \\ & 5 & 8 & 7 & 5 & 0 \\ & & 5 & 8 & 7 & 5 \\ \hline 1 & 8 & 2 & 1 & 2 & 5 \end{array}$$ OR $$\begin{array}{ccccc} & 1 & 7 & 5 \\ & 1 & 5 & 5 \\ \hline 1 & 7 & 5 & 0 & 0 \\ & 8 & 7 & 5 & 0 \\ & & 8 & 7 & 5 \\ \hline 2 & 7 & 1 & 2 & 5 \end{array}$$ OR (155 ÷ 10) + (155 ÷ 20) + (155 ÷ 40) = 15.5 + 7.75 + 3.875 = 27.125	OE Correct method for multiplying Allow one arithmetic slip but not a place value error	N10b
	1		(£)182.13	CAO	M13b
1 (c)	**2**	**PS**	See below		
	1		$\dfrac{8}{20}$	Accept equivalent fractions, decimals, or percentages Accept comment that 8 is less than 10 or 12 is greater than 10	H28
	1		No and $\dfrac{10}{20}$ or No and 0.5 and 0.4 or No and 50% and 40%	Strategy to compare their $\dfrac{8}{20}$ with $\dfrac{1}{2}$	N7b

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1 (d)	3	PS	See below		
	1		0.2 × 28 or 28 ÷ 5 or 5.6	Converts to grams	M14a
	1		(5.6 + 3.9) × 18 or 171 or 100.8(0) **and** 70.2(0)	Award if individual profit per item calculated, i.e. (£)25.55 & (£) 4.70 or (£)30.25 seen	M15
	1		140.75 **and** Yes or 100.8(0) **and** 70.2(0) **and** Yes	FT their 171 and their 140.75 (from 75.25 + 65.50) Accept (£)30.25 **and** profit	N9a
1 (e)	3	UPS	(£)18	Award 3 marks if correct answer given	
	1		(5 × 6) + (15 × 5) + (25 × 6) + (35 × 3) or 30 + 75 + 150 + 105 or 360	Must be consistent values eg all upper or lower	H24
	1		their 360 ÷ 20		H24
	1		(£)18	CAO	H24
1 (f)	2	PS	0.04	Award 2 marks if correct answer given	
	1		0.2 × 0.2		H26
	1		0.04	OE	H26

(Section B) Activity 2: Allotment		(Calculator Test)			
Q	**Marks**	**UPS / PS**	**Process and Answer**	**Additional or Alternative Evidence (with guidance)**	**SC**
2 (a)	3	UPS	318.495 (m²) or 318.5 or 318	Award 3 marks if correct answer given	
	1		Correct total area of rectangular elements	See diagrams for alternative strategies	M16b
	1		Correct area of triangle or trapezium	See diagrams for alternative strategies	M16b
	1		318.495 (m²) or 318.5 or 318	FT **their** areas from correct methods in first two marks Accept rounding to nearest whole number of 1 dp	M16b

5

Total area = 318.495 m²

7.5 m

18.3 m

9.8 m

20.4 m

7.5 m

118.575 m²

18.3 m

199.92 m²

9.8 m

20.4 m

7.5 m

18.3 m

137.25 m²

181.245 m²

9.8 m

20.4 m

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Figure 1

7.5 m

54.825 m²

18.3 m

373.32 m²

9.8 m

20.4 m

Figure 2

7.5 m

54.825 m²

18.3 m

137.25 m²

126.42 m²

9.8 m

20.4 m

Figure 3

7.5 m

63.75 m²

54.825 m²

18.3 m

199.92 m²

9.8 m

20.4 m
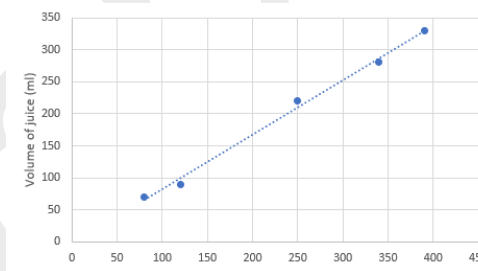
2 (b)	4	PS	(£)1650	Award 4 marks if correct answer given	
	1		$3.14 \times \dfrac{7}{2} \times \dfrac{5}{2} \times 0.8$ or 21.98 or 22	OE Correct method for volume	M17a
	1		21.98 or 22 (m³)	CAO	M17a
	1		Bag A: their 22 ÷ 0.9 or 25 and their 25 × 74 or **1850** AND Bag B: 22 ÷ 1.5 or 15 and their 15 × 110 or **1650**	Accept correct argument involving proportion eg B is 5/3 (1.66) the volume of A but only 55/37 (1.49) the cost	M13a
	1		(£)1650	FT their volume (unrounded value = maximum 3 marks)	M13a
2 (c)	2	PS	4.8 hours or 4 hours and 48 minutes	Award 2 marks if correct answer given	
	1		3 × 8 or 24		N11b
	1		4.8 hours or 4 hours 48 minutes	Must include units An answer of $\dfrac{24}{5}$ hours gains the 1st mark only	N11b
2 (d)	2	PS	See below (worked example)		
	1		4 crosses at corners of usable area		M18b
	1		7 columns and 3 rows	Accept 5 × 4	M18b
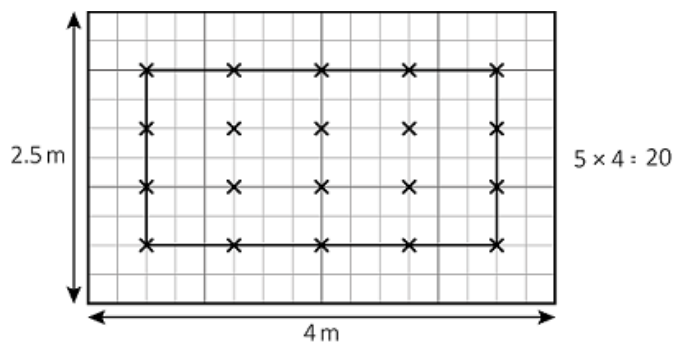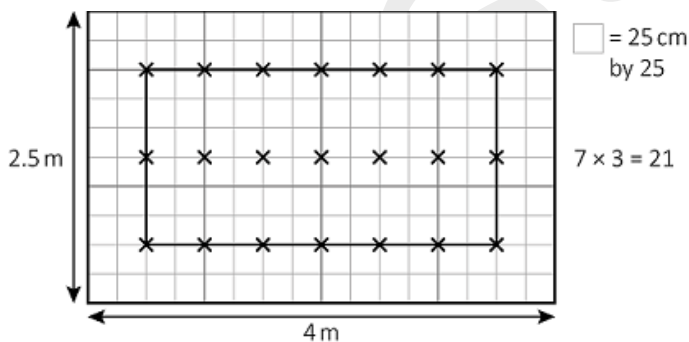
2 (e)	4	PS	76.12 (pounds) with Cara	Award 4 marks if correct answer given	
	1		Calculation of correct mean or median for both varieties. Allow rounding to 1dp	<table><tr><td></td><td>**Cara**</td><td>**Desiree**</td></tr><tr><td>Mean</td><td>1.73</td><td>1.6325</td></tr><tr><td>Median</td><td>1.73</td><td>1.59</td></tr></table>	H25
	1		Cara	FT if method for mean or median is correct	H25

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	1		20 × their 1.73 or 34.6 (kg)	FT if method for mean or median is correct	N11a
	1		Correct answer to their 34.6 × 2.2 or 76.12 (pounds)	Accept their answer correctly rounded to a whole number or any number of dps	M14a

Activity 3:		Fruit juice	(Calculator Test)		
Q	**Marks**	**UPS / PS**	**Process and Answer**	**Additional or Alternative Evidence (with guidance)**	**SC**
3 (a)	**1**	**UPS**	70 (ml)	CAO	H23a
3 (b)	**3**	**PS**	See below		
	1		250 (ml) 240 to 260 (ml)	Accept 240 to 260 (ml) Award mark even if no line of best fit shown. 	H28
	1		their 250 ÷ 568 or 0.44 or (2 ÷ 5) × 568 or 227(.2)	Converts their 250 ml to pints Converts $\frac{2}{5}$ of a pint to ml	M14a
	1		0.4 or 227(.2) And correct statement about claim	FT their volume in ml from chart FT correct conversion of their volume	N4
3 (c)	**2**	**UPS**	500 (g)	Award 2 marks if correct answer given	
	1		150 ÷ 0.3 or (150 × 100) ÷ 30	OE	N6b
	1		500 (g)	CAO	N6b
3 (d)	**2**	**UPS**	$\frac{4}{50}$	Accept rounded answer: 0.4, 0.41, 0.410	
	1		Denominator of 50		H27
	1		$\frac{4}{50}$ or $\frac{2}{25}$ or 0.08 or 8%	OE Implies first mark	H27
3 (e)	**5**	**PS**	(£)62(.00)	Award 5 marks if correct answer given	
	1		(Pineapple) 4.8 (litres) (Mango) 3.2 (litres)		N11a

	1		their 4.8 ÷ 0.2 or 24 and their 3.2 ÷ 0.08 or 40	FT **their** values from 1st mark	N11a
	1		(Pineapple) 24 and (Mango) 40	CAO	N9b
	1		**(their** (24) × 1.5) + (**their** (40) × 0.65) or 62	FT their values from 3rd mark	M13a
	1		(£)62(.00)	FT correct total cost for **their** number of fruits	M13a
3 (f)	**2**	**PS**	16.7(%)	Award 2 marks if correct answer given	
	1		(1.75 − 1.5) ÷ 1.5 or 0.166… or 16.66…		N5b
	1		16.7(%)	CAO	N9b

Activity 4:	**Working in the theatre**	(Calculator Test)			
Q	**Marks**	**UPS / PS**	**Process and Answer**	**Additional or Alternative Evidence (with guidance)**	**SC**
4 (a)	**2**	**PS**	See below		
	1		-3, 2 point marked or implied	May be implied by circle centred on (−3, 2)	M19
	1		Circle drawn with centre (-3, 2) and with radius 1.5 (m)		M21
4 (b)	**2**	**UPS**	8.8 (m^3)	Award 2 marks if correct answer given	
	1		3.14 × 1.5^2 × 1.25	OE Correct substitution into formula for volume.	M17a
	1		8.8 (m^3)	CAO	N9b
4 (c)	**4**	**PS**	See below		
	1		4 × 3.14 × 0.6 × 0.6 or 4 × 3.14 × 60 × 60	Correct method required	M17b
	1		4.5(216) or 45216	Accept rounding to at least 2 sig fig.	M17b
	1		**their** 4.5(216) × 300 or 1356.48 or **their** 45216 ÷ 10000 × 300	FT on **their** value from previous mark	M15
	1		6 (bottles)	CAO with correct supporting working	N11a
4 (d)	**3**	**PS**	See below		

			Alternative method 1		
	1		(Spotlight P) $\dfrac{19 \times 5.6 \times 18}{1000}$ (Spotlight Q) $\dfrac{26 \times 5.6 \times 18}{1000}$	Substitute correctly into both formulas	N3
	1		P 1.915 Q 2.62	Calculate both values	N3
	1		0.47 and 0.235 and (Spotlight) P	CAO Calculates differences from 2.15	N9a
			Alternative method 2		
	1		(B =) $\dfrac{2.15 \times 1000}{5.6 \times 18}$		N3
	1		21.329(…) or 21.33	Calculates beam angle for 2.15 diameter	N3
	1		2.32 and 4.68 and (Spotlight) P	Calculates differences from 2.15	N9a
4 (e)	1	UPS	3.2	CAO	N4
4 (f)	3	PS	133.4 (m)	Award 3 marks if correct answer given	
	1		$10 \times 3\dfrac{1}{5}$ or 32		N4
	1		**their** 32 ÷ 1.4 or 22.857	FT from their value in first mark	N11a
	1		133.4 (m)	CAO (from 23 × 5.8)	N11a