**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. |
| **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.

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| **Paper number: P001270** | **Version: 1.1** |
| **(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 x 155 or 27.125or (155 ÷ 10) + (155 ÷ 20) + (155 ÷ 40) | OE Full correct method for finding 17.5% or 117.5% of 155  | M13b |
| 1 |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | 1 | 1 | 7 | 5 |
|  |  |  | 1 | 5 | 5 |
| 1 | 1 | 7 | 5 | 0 | 0 |
|  | 5 | 8 | 7 | 5 | 0 |
|  |  | 5 | 8 | 7 | 5 |
| 1 | 8 | 2 | 1 | 2 | 5 |

OR

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | 1 | 7 | 5 |
|  |  | 1 | 5 | 5 |
| 1 | 7 | 5 | 0 | 0 |
|  | 8 | 7 | 5 | 0 |
|  |  | 8 | 7 | 5 |
| 2 | 7 | 1 | 2 | 5 |

OR(155 ÷ 10) + (155 ÷ 20) + (155 ÷ 40)= 15.5 + 7.75 + 3.875= 27.125 | OE Correct method for multiplyingAllow one arithmetic slip but not a place value error  | N10b |
| 1 |  | (£)182.13 | CAO | M13b |
| **1 (c)** | **2** | **PS** | See below |  |  |
|  | 1 |  |  | Accept equivalent fractions, decimals, or percentagesAccept comment that 8 is less than 10 or 12 is greater than 10 | H28 |
| 1 |  | No and  or No and 0.5 and 0.4or No and 50% and 40% | Strategy to compare their with  | N7b |
| **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 |

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| **(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 |

|  |
| --- |
| Total area = 318.495 m218.3 m7.5 m20.4 m9.8 m199.92 m2118.575 m218.3 m7.5 m20.4 m9.8 m |
|  |
| 18.3 m7.5 m20.4 m9.8 m181.245 m2137.25 m2 |
|  |
|  |
| 18.3 m7.5 m20.4 m9.8 m54.825 m2199.92 m263.75 m218.3 m7.5 m20.4 m9.8 m54.825 m2137.25 m2126.42 m2 |

18.3 m

7.5 m

20.4 m

9.8 m

54.825 m2

373.32 m2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **2 (b)** | **4** | **PS** | (£)1650 | Award 4 marks if correct answer given |  |
| 1 |  | 3.14 ×  × x 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**ANDBag 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 unitsAn answer of 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 |



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| **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 |

|  |  |  |
| --- | --- | --- |
|  | **Cara** | **Desiree** |
| Mean | 1.73 | 1.6325 |
| Median | 1.73 | 1.59 |

 | H25 |
| 1 |  | Cara | FT if method for mean or median is correct | H25 |
| 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 |

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| **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 0.44or (2 ÷ 5) × 568 or 227(.2) | Converts their 250 ml to pintsConverts  of a pint to ml | M14a |
| 1 |  | 0.4 or 227(.2) And correct statement about claim  | FT their volume in ml from chartFT 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** |  | Accept rounded answer: 0.4, 0.41, 0.410 |  |
| 1 |  | Denominator of 50 |  | H27 |
| 1 |  | or 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 24and 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 |

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| **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 (m3) | Award 2 marks if correct answer given |  |
| 1 |  | 3.14 × 1.52 × 1.25 | OE Correct substitution into formula for volume.  | M17a |
| 1 |  | 8.8 (m3) | CAO | N9b |
| **4 (c)** | **4** | **PS** | See below |  |  |
| 1 |  | 4 × 3.14 × 0.6 × 0.6or4 × 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 1356.48or **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) (Spotlight Q)  | Substitute correctly into both formulas | N3 |
| 1 |  | P 1.915Q 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 =)  |  | 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 ×  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 |