National Qualifications 2025

2025 Applications of Mathematics

Higher

Question Paper Finalised Marking Instructions

These marking instructions have been prepared by examination teams for use by SQA appointed markers when marking external course assessments.

General marking principles for Higher Applications of Mathematics

Always apply these general principles. Use them in conjunction with the detailed marking instructions, which identify the key features required in candidates' responses.

For each question, the marking instructions are generally in two sections:

generic scheme — this indicates why each mark is awarded
illustrative scheme — this covers methods which are commonly seen throughout the marking

In general, you should use the illustrative scheme. Only use the generic scheme where a candidate has used a method not covered in the illustrative scheme.

(a) Always use positive marking. This means candidates accumulate marks for the demonstration of relevant skills, knowledge and understanding; marks are not deducted for errors or omissions.

(b) If you are uncertain how to assess a specific candidate response because it is not covered by the general marking principles or the detailed marking instructions, you must seek guidance from your team leader.

(c) One mark is available for each ○. There are no half marks.

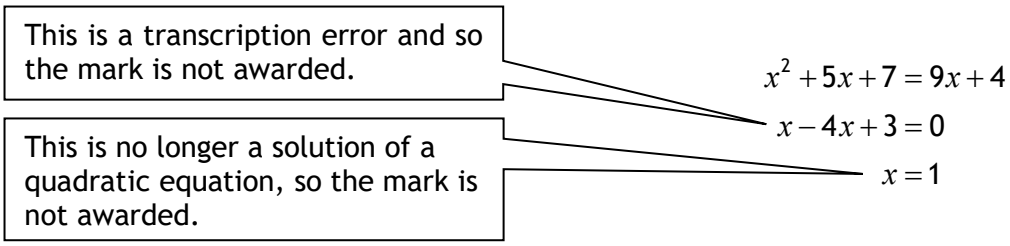
(d) If a candidate's response contains an error, all working subsequent to this error must still be marked. Only award marks if the level of difficulty in their working is similar to the level of difficulty in the illustrative scheme.

(e) Only award full marks where the solution contains appropriate working. A correct answer with no working receives no mark, unless specifically mentioned in the marking instructions.

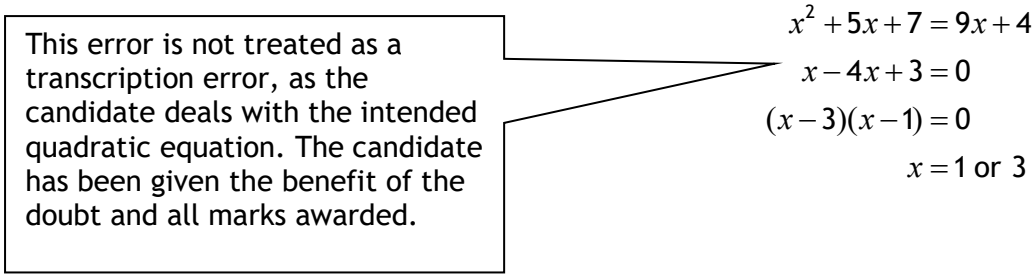
(f) Candidates may use any mathematically correct method to answer questions, except in cases where a particular method is specified or excluded.

(g) If an error is trivial, casual or insignificant, for example 6 x 6 = 12, candidates lose the opportunity to gain a mark, except for instances such as the second example in point (h) below.

(h) If a candidate makes a transcription error (question paper to script or within script), they lose the opportunity to gain the next process mark, for example



The following example is an exception to the above



(i) Horizontal/vertical marking

If a question results in two pairs of solutions, apply the following technique, but only if indicated in the detailed marking instructions for the question.

Example:

	$\bigcirc^5$	$\bigcirc^6$
$\bigcirc^5$	$x=2$	$x=-4$
$\bigcirc^6$	$y=5$	$y=-7$

Horizontal: $\bigcirc^5$ $x=2$ and $x=-4$ $\bigcirc^6$ $y=5$ and $y=-7$

Vertical: $\bigcirc^5$ $x=2$ and $y=5$ $\bigcirc^6$ $x=-4$ and $y=-7$

You must choose whichever method benefits the candidate, **not** a combination of both.

(j) In final answers, candidates should simplify numerical values as far as possible unless specifically mentioned in the detailed marking instruction. For example

$\frac{15}{12}$ must be simplified to $\frac{5}{4}$ or $1\frac{1}{4}$

$\frac{43}{1}$ must be simplified to 43

$\frac{15}{0{\cdot}3}$ must be simplified to 50

$\frac{4/5}{3}$ must be simplified to $\frac{4}{15}$

$\sqrt{64}$ must be simplified to 8*

*The square root of perfect squares up to and including 144 must be known.

(k) Commonly Observed Responses (COR) are shown in the marking instructions to help mark common and/or non-routine solutions. CORs may also be used as a guide when marking similar non-routine candidate responses.

(l) Do not penalise candidates for any of the following, unless specifically mentioned in the detailed marking instructions:

- working subsequent to a correct answer
- correct working in the wrong part of a question
- legitimate variations in numerical answers/algebraic expressions, for example angles in degrees rounded to nearest degree
- omission of units
- bad form (bad form only becomes bad form if subsequent working is correct), for example

  $(x^3+2x^2+3x+2)(2x+1)$ written as

  $(x^3+2x^2+3x+2)\times 2x+1$

  $=2x^4+5x^3+8x^2+7x+2$

  gains full credit

- repeated error within a question, but not between questions or papers

(m) In any 'Show that…' question, where candidates have to arrive at a required result, the last mark is not awarded as a follow-through from a previous error, unless specified in the detailed marking instructions.

(n) You must check all working carefully, even where a fundamental misunderstanding is apparent early in a candidate's response. You may still be able to award marks later in the question so you must refer continually to the marking instructions. The appearance of the correct answer does not necessarily indicate that you can award all the available marks to a candidate.

(o) You should mark legible scored-out working that has not been replaced. However, if the scored-out working has been replaced, you must only mark the replacement working.

(p) If candidates make multiple attempts using the same strategy and do not identify their final answer, mark all attempts and award the lowest mark. If candidates try different valid strategies, apply the above rule to attempts within each strategy and then award the highest mark.

For example:

Strategy 1 attempt 1 is worth 3 marks.	Strategy 2 attempt 1 is worth 1 mark.
Strategy 1 attempt 2 is worth 4 marks.	Strategy 2 attempt 2 is worth 5 marks.
From the attempts using strategy 1, the resultant mark would be 3.	From the attempts using strategy 2, the resultant mark would be 1.

In this case, award 3 marks.

Note: Marking from Image (MFI) annotation change from 2025

A double cross-tick is used to indicate correct working which is irrelevant or insufficient to score any marks. In MFI marking instructions prior to 2025 this was shown as **ü₂** or ü2.

From 2025, the double cross-tick will no longer be used in MFI. A cross or omission symbol will be used instead.

Marking instructions for each question

Question			Generic scheme	Illustrative scheme	Max mark
1.			•[1] state an assumption about number of years in childhood •[2] state an assumption about number of portions •[3] estimate total number of portions	•[1] minimum 7 years, maximum 18 years •[2] minimum 2 portions per day, maximum 10 portions per day. •[3] eg 5 x 365 x 12 = 21,900 (portions per year)	**3**

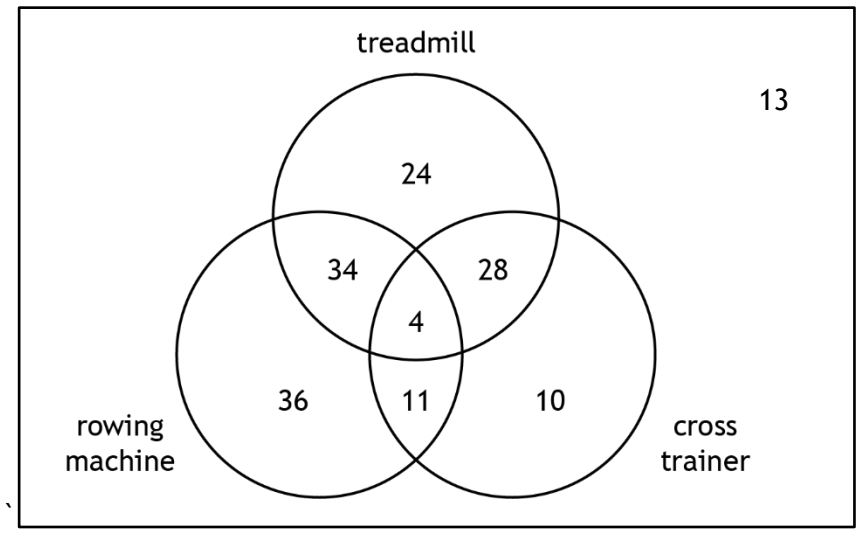
Notes:

1. Units must be stated for •[1] and •[2].
2. Accept "a day" or "portions" as units for •[2].
3. Accept the use of portions per week x 52 x years.
4. Accept the use of 365.24 or 365.25 days.
5. At least 2 assumptions must be stated and used in the calculation to award •[3].
6. For a valid calculation with no assumptions stated, award •[3] only.
7. Do not penalise candidates who state the number of portions of fruit and number of portions of vegetables separately.

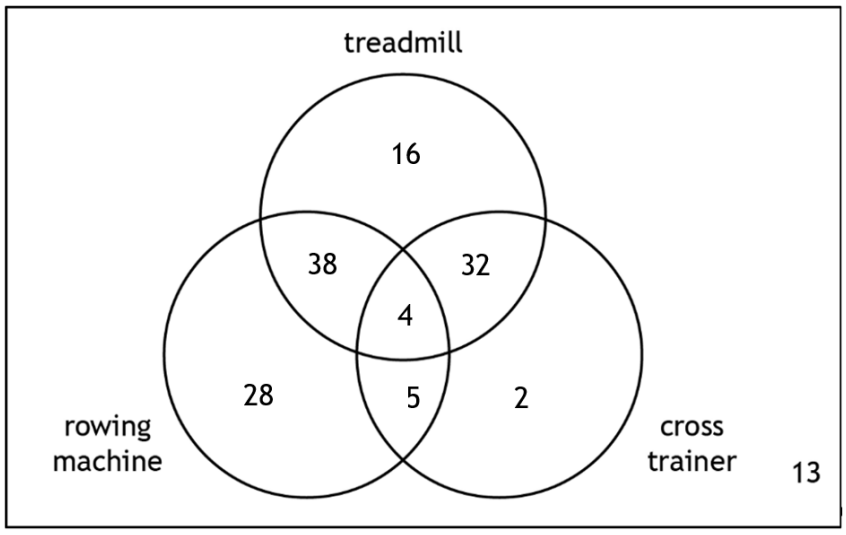
Commonly Observed Responses:

Question			Generic scheme	Illustrative scheme	Max mark
2.	(a)		•[1] interpret 'all three' **and** 'none' •[2] interpret bullet points 2 to 4 with bullet point 1 •[3] complete Venn diagram	•[1] 4 **and** 13 •[2] 34, 28 and 11 •[3] 24, 36 and 10	**3**

Notes:



Commonly Observed Responses:
Candidate A



award ✓ × ✓[1]

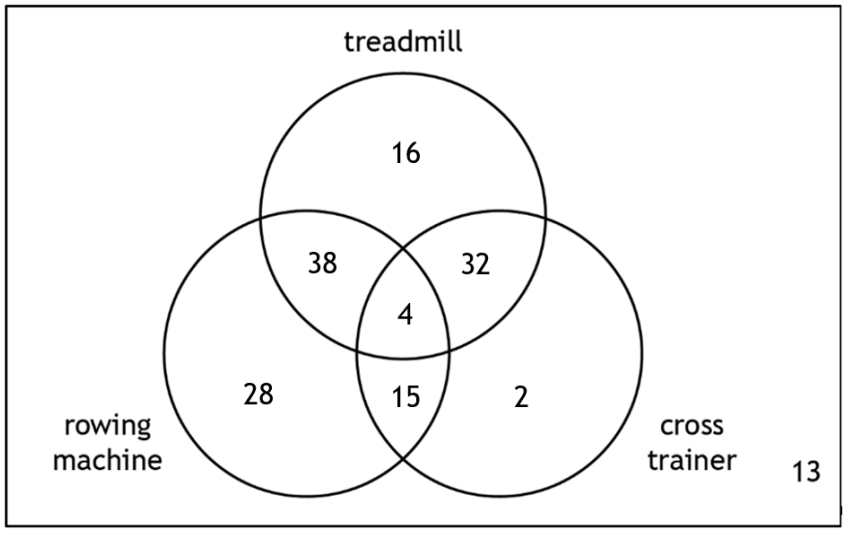
Question			Generic scheme	Illustrative scheme	Max mark
2.	(b)		•[4] calculate total number of gym members •[5] determine probability	•[4] 160 •[5] $\frac{11}{160}$ or equivalent	**2**

Notes:

Commonly Observed Responses:

Candidate A

For an answer in (a) of



leading to $\frac{15}{148}$.

award ✓1 ✓1

Question			Generic scheme	Illustrative scheme	Max mark
3.			•[1] calculate taxable income after pension deduction •[2] calculate tax for starter or basic band •[3] calculate tax for remaining band •[4] calculate net monthly salary	•[1] (£)22,913.28 •[2] see table •[3] see table •[4] (£)1656.41	**4**

Notes:

1. Table of taxable income and tax.

Taxable Income (£)	Tax Rate	Tax Payable (£)
12570	0%	0
2306	19%	438.14
8037.28	20%	1607.46
	Total	2045.60

2. •[4] is only available if tax, National Insurance and pension contributions are all deducted.
3. Final answer must be stated to two decimal places, ignore any rounding errors or truncation.

Question			Generic scheme	Illustrative scheme	Max mark
3.			(continued)		

Commonly Observed Responses:

Candidate A

Candidate calculates tax on gross pay.

Taxable Income (£)	Tax Rate	Tax Payable (£)
12570	0%	0
2306	19%	438.14
10084	20%	2016.80
(tax calculated on £24960)	Total	2454.94

Leading to a net monthly salary of (£)1622.30.

award ^ ✓ $✓_1$ $✓_1$

Candidate B

Candidate deducted monthly NI contribution from annual taxable income.

Taxable Income (£)	Tax Rate	Tax Payable (£)
12570	0%	0
2306	19%	438.14
7954.72	20%	1590.94
(tax calculated on £22830.72)	Total	2029.08

Leading to a net monthly salary of (£)1733.47.

award ✓ ✓ ✗ ✗

Candidate C

Candidate deducted National Insurance contribution before pension is calculated.

Taxable Income (£)	Tax Rate	Tax Payable (£)
12570	0%	0
2306	19%	438.14
7127.80	20%	1425.56
(tax calculated on £22003.80)	Total	1863.70

Leading to a net monthly salary of (£)1678.34.

award ✗ ✓ $✓_1$ $✓_1$

Candidate D

Candidate deducted annual NI contribution from taxable income before calculating tax.

Taxable Income (£)	Tax Rate	Tax Payable (£)
12570	0%	0
2306	19%	438.14
7046.56	20%	1409.31
(tax calculated on £21922.56)	Total	1847.45

Leading to a net monthly salary of (£)1672.93.

award ✗ ✓ $✓_1$ $✓_1$

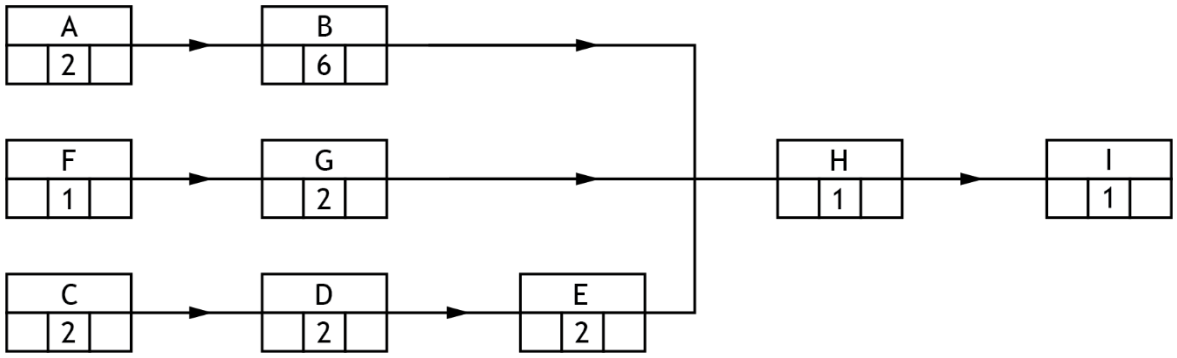
Question			Generic scheme	Illustrative scheme	Max mark
4.	(a)		•[1] state critical path	•[1] A B H I	**1**
Notes:					
Commonly Observed Responses:					
	(b)		•[2] interpret tasks from Gantt chart •[3] interpret times from Gantt chart •[4] forward scan completed •[5] backward scan completed	•[2] see note 2 •[3] see note 2 •[4] see note 3 •[5] see note 4	**4**

Notes:

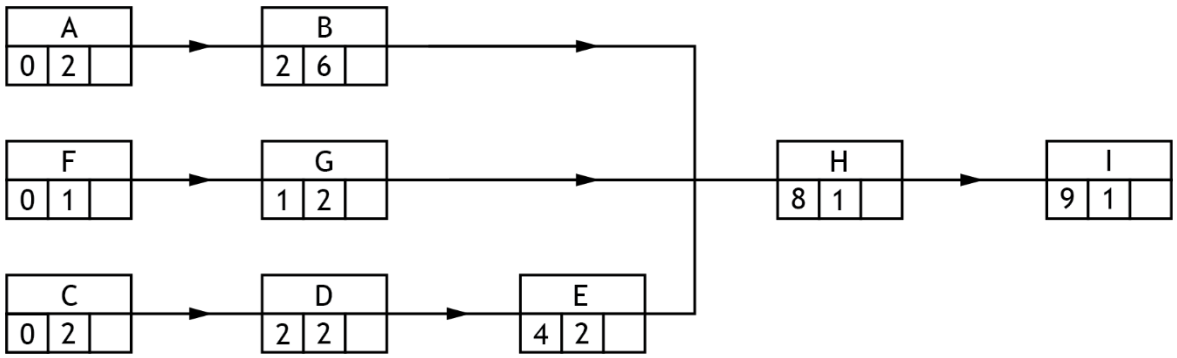
1. If candidate has left one node blank, •[2] is not awarded and •[3], •[4] and •[5] are still available. If candidate has left two or more nodes blank, •[2] is not awarded and •[3], •[4] and •[5] are **not** available.

Question			Generic scheme	Illustrative scheme	Max mark
4.	(b)		**(continued)**		

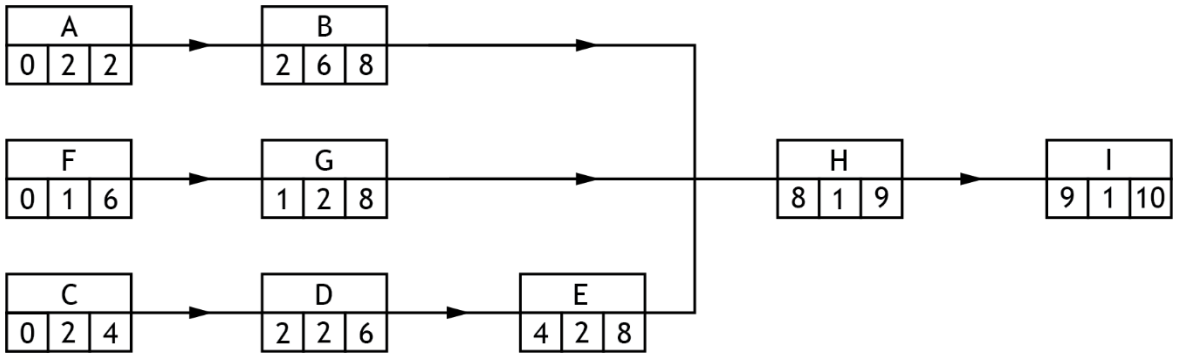
2. Tasks and durations



3. Forward scan

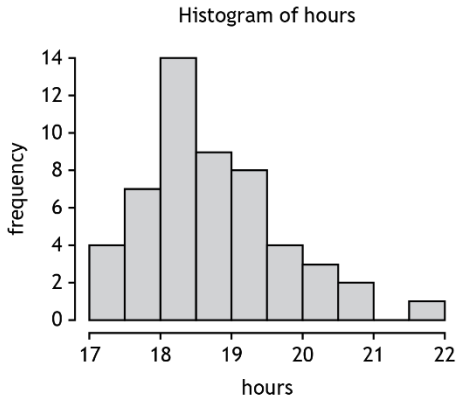


4. Backward scan



Commonly Observed Responses:

Question			Generic scheme	Illustrative scheme	Max mark
4.	(c)		•[6] determine minimum time taken	•[6] 11 hours	**1**
Notes: 1. 11 hours can be determined from the Gantt chart.					
Commonly Observed Responses:					

Question			Generic scheme	Illustrative scheme	Max mark
5.	(a)	(i)	•[1] construct histogram	•[1] 	**1**
Notes: 1. Do not penalise missing or incorrect labels and titles. 2. •[1] is only available if all bins are visible.					
Commonly Observed Responses:					
		(ii)	•[2] describe distribution	•[2] skewed (to the right)	**1**
Notes: 1. Do not accept skewed to the left or negatively skewed. 2. •[2] is not available if there is no histogram constructed in (a)(i).					
Commonly Observed Responses:					
		(iii)	•[3] generate appropriate measure of location •[4] identify measure of location	•[3] output from software •[4] 18.7 (hours)	**2**
Notes: 1. •[4] is only available if measure of **location** is explicitly identified. 2. Choice of location must be consistent with answer to (a)(ii). If distribution is not described, choice of location must be consistent with the histogram in (a)(i). 3. Answer consistent with (a)(ii), with no output from software, award •[3] and •[4].					

Question			Generic scheme	Illustrative scheme	Max mark
5.	(a)	(iii)	**(continued)**		

Commonly Observed Responses:

Candidate A

```
> median(hours)
[1] 18.7
```

Stated with no further working, consistent with previous working.

award ✓ ✓

Candidate B

```
> mean(hours)
[1] 18.82692
```

Stated with no further working, following evidence that candidate is assuming normal/symmetric distribution.

award $✓_1$ $✓_1$

Candidate C

```
> mean(hours)
[1] 18.82692
```

Stated with no further working, following evidence that candidate is assuming non normal distribution.

award × $✓_1$

Candidate D

```
> summary(data)
     hours
 Min.   :17.30
 1st Qu.:18.10
 Median :18.70
 Mean   :18.83
 3rd Qu.:19.32
 Max.   :22.00
```

Stated with no further working.

ward ✓ ^

	(b)		•[5] state valid reason	•[5] eg extrapolation **OR** self-recorded **OR** not a random sample	**1**

Notes:

1. Accept:
   a. Only one week in July, does not **represent** the whole summer.
   b. Data could be false due to people not telling the truth.

2. Do not accept:
   a. Only one week in July throughout the whole summer.
   b. The data might not be **accurate**.
   c. More people could be listening this year.

Commonly Observed Responses:

Question	Generic scheme	Illustrative scheme	Max mark
6.	**Method 1**	**Method 1**	
	$\bullet^1$ accumulate value of initial deposit for one month	$\bullet^1$ $1.0325^{\frac{1}{12}} \times 2500 = (£)2506.67$	
	$\bullet^2$ evidence of correct government bonus amount	$\bullet^2$ $2500 \times 0.25 (= 625)$	
	$\bullet^3$ identify multiplier for accumulation of final balance including the bonus	$\bullet^3$ $3131.67 \times 1.0325^{\frac{11}{12}}$	
	$\bullet^4$ calculate final balance	$\bullet^4$ $(£)3224.84$	
	Method 2	**Method 2**	**4**
	$\bullet^1$ accumulate value of initial deposit	$\bullet^1$ $2500 \times 1.0325 (= 2581.25)$	
	$\bullet^2$ evidence of correct government bonus amount	$\bullet^2$ $2500 \times 0.25 (= 625)$	
	$\bullet^3$ identify multiplier for accumulation of bonus	$\bullet^3$ $625 \times 1.0325^{\frac{11}{12}}$	
	$\bullet^4$ accumulate bonus and calculate final balance	$\bullet^4$ $(£)3224.84$	

Notes:
1. Final answer must be stated to two decimal places, ignore any rounding errors or truncation.
2. Accept calculations using monthly or annual effective rates of interest.
3. $\bullet^2$ may be implied by the appearance of £3125.

Commonly Observed Responses:

Candidate A - method 2

Accumulate bonus at start of month one. $(2500 \times 1.25 \times 1.0325)$

Leading to $(£)3226.56$.

award ✓ ✓ × ×

Candidate B - method 1

Accumulate interest for month one. $(2500 \times 1.0325^{\frac{1}{12}})$

Calculate the bonus on the balance at end of month one. (1.25×2506.67)

Accumulate balance to the end of month 12. $(3133.34 \times 1.0325^{\frac{11}{12}})$

Leading to $(£)3226.56$.

award ✓ × $✓_1$ $✓_1$

Candidate C - method 2

$(2581.25 + 625) \times 1.0325^{\frac{11}{12}} = 3206.25 \times 1.0325^{\frac{11}{12}} = (£)3301.64$.

award ✓ ✓ ✓ ×

Question			Generic scheme	Illustrative scheme	Max mark
7.	(a)		$\bullet^1$ calculate the probability of a delay $\bullet^2$ calculate the expected cost of a delay	$\bullet^1$ $1-0.76$ or 0.24 $\bullet^2$ $(£)6000$	**2**
Notes: 1. For (£)6000 with no working award $\bullet^1$ and $\bullet^2$. 2. For (£)19,000 with no working award only $\bullet^2$. 3. $\bullet^2$ is not available for answers greater than £25,000.					
Commonly Observed Responses:					
	(b)		$\bullet^3$ calculate expected cost with control measure 2	$\bullet^3$ $1500+(0.2\times25000)=(£)6500$	**1**
Notes:					
Commonly Observed Responses:					
	(c)		$\bullet^4$ give valid explanation	$\bullet^4$ control measure 1 because it has the lowest expected cost	**1**
Notes: 1. Do not accept: control measure one is less than control measure two.					
Commonly Observed Responses:					

Question			Generic scheme	Illustrative scheme	Max mark
8.	(a)		•[1] calculate loan amount •[2] create formula for interest repayment, capital repayment and loan outstanding •[3] complete remainder of loan schedule •[4] calculate monthly or annual effective rate of interest •[5] calculate annual or monthly effective rate of interest	•[1] (£)6000 (check cell C8 or F17) •[2] check cells C18, D18, E18, F18 •[3] check cells C53, D53, E53, F53 •[4] 1.496…(%) or 19.5…(%) (using Goal Seek function) •[5] 19.5…(%) or 1.496…(%) (stated or implied by formula)	**5**

Notes:

1. •[1] is available for (£)6000 appearing in cell C8 or in cell F17.
2. •[2] is only available if formula view is provided so that the use of the ROUND function can be seen.
3. For •[3] to be awarded, the value in cell C53 must be (£)216.13.
4. •[4] is only available if Loan outstanding is equal to 0 at month 36 (cell F53).
5. Be aware of "=(1+C9)^1/12-1" instead of "=(1+C9)^(1/12)-1" in cell C10.
6. For marks •[2], •[3], •[4] and •[5], see below:

	Formula View	Numerical view
•[2]	C18=$C$12 D18=ROUND($C$10*F17,2) E18=C18-D18 F18=F17-E18	C18=216.77 D18=89.74 E18=127.03 F18=5872.97
•[3]	C19:C52=$C$12 C53=C13 D53=ROUND($C$10*F52,2) E53=C53-D53 F53=F52-E53	C19:C52=216.77 C53=216.13 D53=3.18 E53=212.95 F53=0.00
•[4] or •[5]	C10=(1+C9)^(1/12)-1 **or** C9=(1+C10)^12-1	

Commonly Observed Responses:

Candidate A

Loan schedule completed, formula view provided, for £7500 leads to C9 = 2.6…% and C10 = 0.216…%

award ✗ ✓ ✓ ✓[1] ✓[1]

Question			Generic scheme	Illustrative scheme	Max mark
8.	(b)		•[6] any valid reason	•[6] eg **financial protection** in the event of an **accident**	**1**

Notes:

1. Accept:
   a. Pays out if the car is stolen.
   b. Pays out if the car is vandalised.
   c. You're covered if you get into a crash.
   d. If you get in accident, you can pay for the damages.

2. Do not accept:
   a. Pay for damage to the car.
   b. In case something happens to your car, you will not pay as much.
   c. You can claim insurance in the event of an accident.

Commonly Observed Responses:

Question			Generic scheme	Illustrative scheme	Max mark
8.	(c)		•^{7} calculate monthly effective interest rate from 1 December 2023 •^{8} correct formula for Account balance before payment and Balance after payment •^{9} amend formula for change in interest rate •^{10} calculate balance at 1 August 2024 **before** the monthly payment is made	•^{7} 0.254…(%) (check cell C12) •^{8} check cells C20, D20 and E20 •^{9} check cell C24 •^{10} check cell C16	**4**

Notes:

1. Do not penalise •^{8} if the ROUND function is not used.
2. If an incorrect formula is used to calculate the monthly effective rate of interest in 8(a) and the same formula is used in 8(c) then •^{7} is available as follow through.
3. •^{10} is only available if the value in cell C16 is the same as the value in cell C31.
   If cell C31 and cell E31 are the same value, then •^{10} is only available if formula view is available to check that the formula in cell C16 is "=C31".
4. For marks •^{7}, •^{8}, •^{9} and •^{10}, see below:

	Formula View	**Numerical view**
•^{7}	C12=(1+C11)^(1/12)-1	C12=0.255%
•^{8}	C20=ROUND(E19*(1+$C$9),2) or C20=ROUND(E19+E19*$C$9,2) D20=$C$14 E20=C20+D20	C20=501.20 D20=250.00 E20=751.20
•^{9}	C24=ROUND(E23*(1+$C$12),2)	C24=1512.26
•^{10}	C16=C31	C16=£3307.36

Commonly Observed Responses:

Candidate A

Interest rate change in cell C23, leading to (£)3307.55.

award ✓ ✓ × ✓$_{1}$

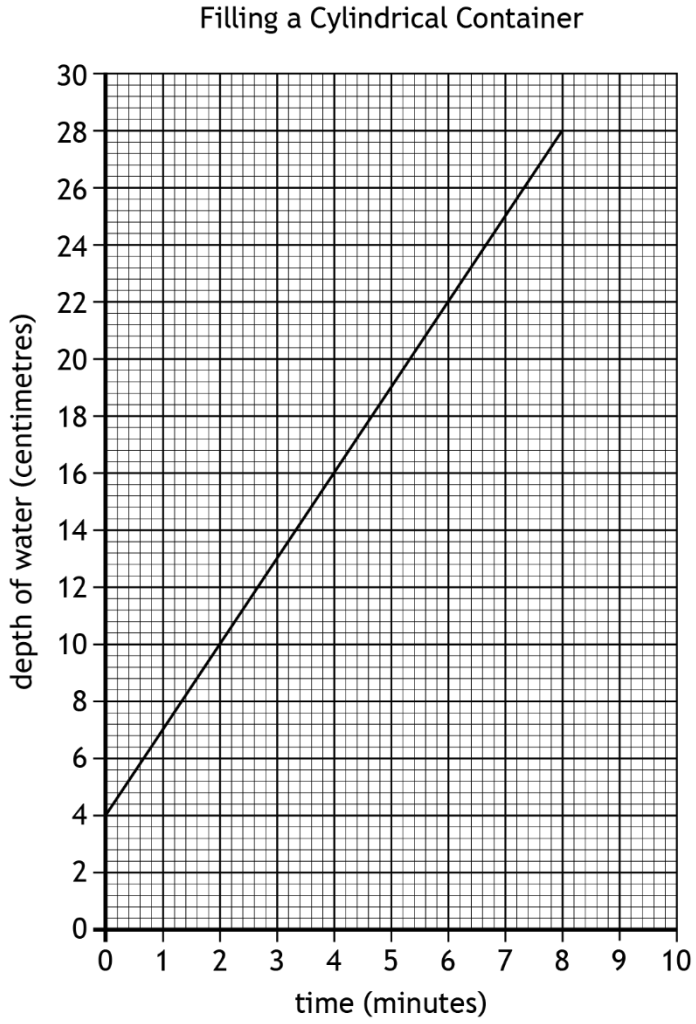
Question			Generic scheme	Illustrative scheme	Max mark
9.	(a)		•[1] state correct type of feed with valid reason	•[1] type A; smaller IQR	**1**
Notes: 1. Accept: a. Feed A because the box is smaller. 2. Do not accept: a. Type A because the boxplot is smaller. b. Type A because it has a smaller range.					
Commonly Observed Responses:					
	(b)	(i)	•[2] state appropriate test	•[2] (two sample) t-test	**1**
Notes: 1. Do not accept paired t-test.					
Commonly Observed Responses:					
		(ii)	•[3] state null and alternative hypotheses	•[3] Null Hypothesis: there is no **difference in the mean** mass of chicks (fed with type A and type B) Alternative Hypothesis: there is a **difference in the mean** mass of chicks (fed with type A and type B)	**1**
Notes: 1. Answer must be consistent with test stated in (b)(i). 2. Accept the use of "weight" in place of "mass".					
Commonly Observed Responses:					

Question			Generic scheme	Illustrative scheme	Max mark
9.	(b)	(iii)	•^{4} interpret p-value •^{5} relate to context of investigation	•^{4} Since p-value < 0.05, reject null hypothesis •^{5} (there is evidence that suggests) there is a **significant** difference in mean mass of chicks	**2**
Notes: 1. •^{5} is still available if •^{4} has not been attempted. 2. If omission of "means" has already been penalised in •^{3}, do not penalise again in •^{5}. 3. Award •^{5} where "average" is used instead of "mean". 4. Accept: there is evidence to suggest the **feed type has a significant effect** on the mean mass of the chicks for •^{5}.					
Commonly Observed Responses:					
	(c)		•^{6} state answer with reason	•^{6} type A as it contains $< 20\%$ protein	**1**
Notes: 1. Answer must reference the 20% protein from the data booklet. 2. Accept: a. Type A because it does not contain 20% to 24% protein. b. Type A because Type B would have between 900g and 1080g of protein. 3. Do not accept: a. Type A because the amount of protein is 16%. b. Type A as the protein percentage is less than required.					
Commonly Observed Responses:					

Question			Generic scheme	Illustrative scheme	Max mark
10.	(a)		•[1] correct starting depth on graph •[2] correct shape •[3] completed graph	•[1] starting depth of 4 centimetres identifiable from graph •[2] straight line with positive gradient •[3] final point on graph at (8, 28)	**3**

Notes:

1.



2. •[2] is not available if candidate does not draw a continuous line.
3. •[3] is not available where graphs extend beyond 8 minutes.
4. To award •[3], final depth must be 24cm greater that starting depth.

Commonly Observed Responses:

Question			Generic scheme	Illustrative scheme	Max mark
10.	(b)	(i)	•^{4} state type of relationship	•^{4} (positive) linear	**1**
Notes: 1. Accept correlation. **2.** Accept linear regression.					
Commonly Observed Responses:					
		(ii)	•^{5} state dependent variable	•^{5} depth (of water)	**1**
Notes: **1.** •^{5} is not available for "depth at start".					
Commonly Observed Responses:					
	(c)		•^{6} identify graph •^{7} explanation	•^{6} Graph C •^{7} eg depth of water increases faster at the start and then slows down	**2**
Notes: 1. •^{7} is not available if •^{6} is not awarded. 2. Do not award •^{7} if candidate **only** discusses the time taken to **fill** the container.					
Commonly Observed Responses:					

Question			Generic scheme	Illustrative scheme	Max mark
11.	(a)		•[1] calculate monthly effective rate of interest •[2] calculate monthly interest and balance on 31 March •[3] interpret minimum payment and calculate balance on 1 April	•[1] 2.2…% •[2] (£)841.33 •[3] (£)799.26	**3**

Notes:

1. Final answer must be stated to two decimal places, ignore any rounding errors or truncation.
2. •[1] can be implied by the appearance of $\times 1.299^{\frac{1}{12}}$.

Commonly Observed Responses:

Candidate A

Rounds monthly effective rate of interest to 2.2%.
(£) $823.19 \times 1.022 =$ (£)841.30, leading to (£)799.24.

award ✓ ✓ ✓

Candidate B

Deducts minimum payment before accumulating interest.
(£) $823.19 \times 0.95 =$ (£)782.03, leading to (£)799.27.

award ✓ ✓ ✓

	(b)		•[4] give appropriate reason	•[4] eg avoid additional interest charges **OR** avoid increasing his debt **OR** improve credit score	**1**

Notes:

1. Accept:
   a. Avoid building up debt.
   b. Decrease the chance of future debt.

2. Do not accept:
   a. Avoids going into debt.

Commonly Observed Responses:

Question			Generic scheme	Illustrative scheme	Max mark
12.	(a)		•[1] remove data for participant 42 •[2] complete 'Colour Blind' column	•[1] check participant 42 has been removed or **all** data has been amended to reflect withdrawal of consent •[2] check cells D6:D55	**2**

Notes:

1. For •[1] check the row numbers to ensure that participant 42 has been removed, not just hidden.

Row hidden:				Row deleted:			
46	41	male	blue	46	41	male	blue
48	43	male	brown	47	43	male	brown

2. For •[2] check participant numbers 3, 7, 13 and 18 are "yes", check all others are "no".

Commonly Observed Responses:

	(b)		•[3] correct frequency for blue or green or brown eye colour •[4] complete frequency table with remaining frequences	•[3] check cells G6, G7 and G8 blue 11 **or** brown 34 **or** green 4 •[4] check cells G6, G7 and G8 blue 11 **and** brown 34 **and** green 4	**2**

Notes:

1. For marks •[3] and •[4], see below:

	Formula View	Numerical view
•[3,4]	G6=COUNTIF($C$6:$C$55,F6) G7=COUNTIF($C$6:$C$55,F7) G8=COUNTIF($C$6:$C$55,F8)	G6=11 G7=34 G8=4
•[3,4]	G6=COUNTIF($C$6:$C$55, "blue") G7=COUNTIF($C$6:$C$55, "brown") G8=COUNTIF($C$6:$C$55, "green")	G6=11 G7=34 G8=4

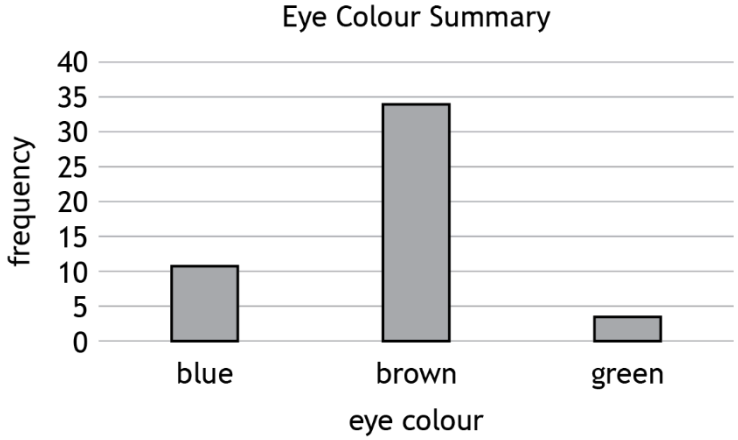
2. Check frequency table can be justified by the data remaining or visible in the Participant Responses table. Be aware of responses where participant 42 is not fully removed.

Commonly Observed Responses:

Question			Generic scheme	Illustrative scheme	Max mark
12	(c)		•[5] choose an appropriate chart to display categorical data •[6] generate chart •[7] include appropriate title and labels	•[5] bar chart or pie chart •[6] see note 1 •[7] see note 1	**3**

Notes:

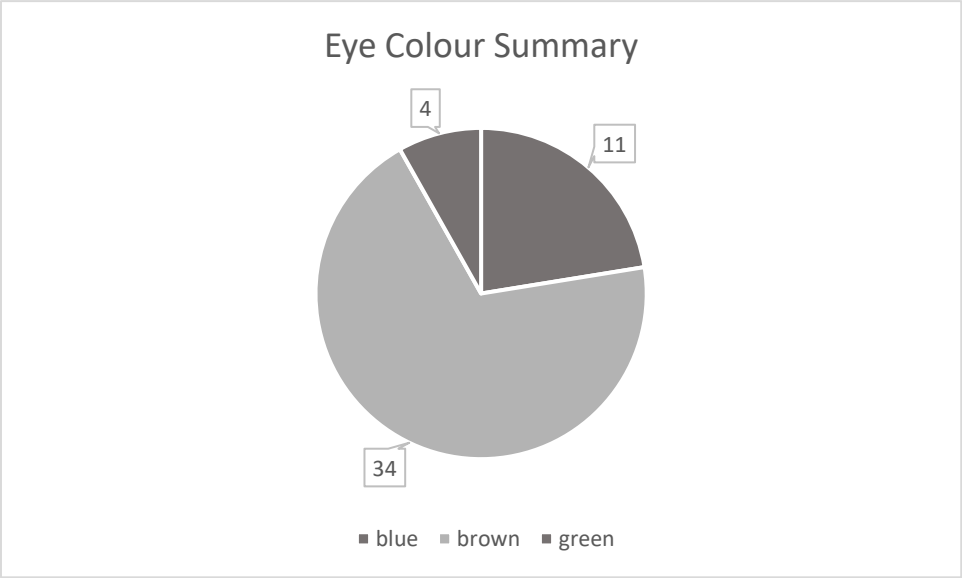
1.



Question			Generic scheme	Illustrative scheme	Max mark
12.	(c)		**(continued)**		

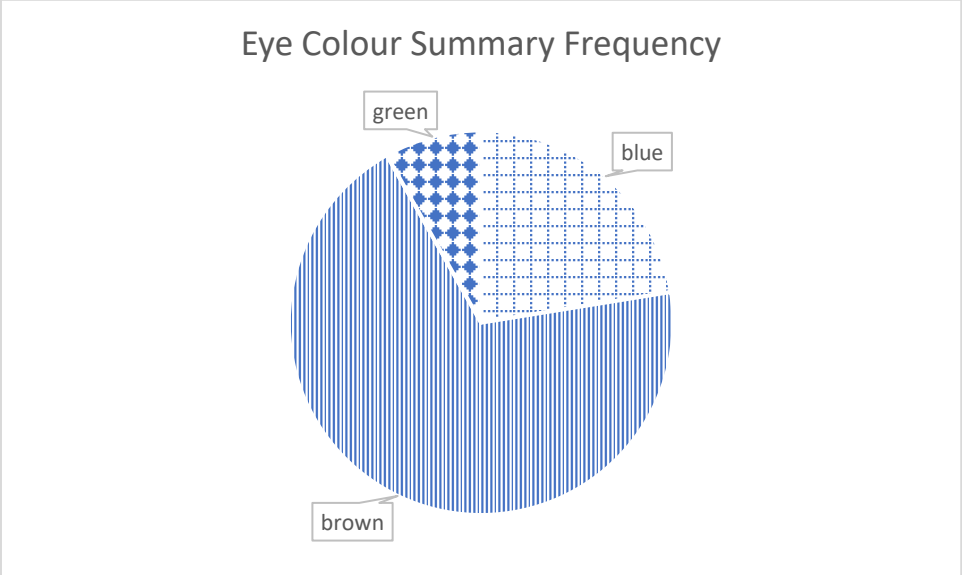
Commonly Observed Responses:

Candidate A
Colour labels not identifiable due to shading on chart.



award ✓ ✓ ×

Candidate B
Frequency labels missing.



award ✓ ✓ ^

[END OF MARKING INSTRUCTIONS]