OCR
Oxford Cambridge and RSA

Foundation

GCSE

Mathematics - Paper 2

J560/02: Paper 2 (Foundation tier)

General Certificate of Secondary Education

Mark Scheme for November 2024

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

MARKING INSTRUCTIONS

PREPARATION FOR MARKING
RM ASSESSOR

1. Make sure that you have accessed and completed the relevant training packages for on-screen marking: *RM Assessor Online Training*; *OCR Essential Guide to Marking*.

2. Make sure that you have read and understood the mark scheme and the question paper for this unit. These are available in RM Assessor.

3. Log-in to RM Assessor then mark and annotate the **required number** of practice responses ("scripts") and the **required number** of standardisation responses.

MARKING

1. Mark strictly to the mark scheme.

2. Marks awarded must relate directly to the marking criteria.

3. The schedule of dates is very important. It is essential that you meet the RM Assessor 50% and 100% deadlines. If you experience problems, you must contact your Team Leader (Supervisor) without delay.

4. If you are in any doubt about applying the mark scheme, consult your Team Leader via the RM Assessor messaging system.

5. Where a candidate has crossed out a response and provided a clear alternative then the crossed out response is not marked. Where no alternative response has been provided, examiners should give candidates the benefit of the doubt and mark the crossed out response where legible.

6. When a candidate provides contradictory responses, then no mark should be awarded, even if one of the answers is correct.

7. On each blank page the annotation **BP** must be inserted to confirm that the page has been checked. For additional objects (if present), a tick must be inserted on each page to confirm that it has been checked.

8. There is a NR (No Response) option. Award NR (No Response)
   - if there is nothing written at all in the answer space
   - OR if there is a comment which does not in any way relate to the question (e.g. 'can't do', 'don't know')
   - OR if there is a mark (e.g. a dash, a question mark) which is not an attempt at the question.

   The hash key (#) on your keyboard will enter NR.

   Note: Award 0 marks for an attempt that earns no credit (including copying out the question).

9. The RM Assessor **comments box** is used by the Principal Examiner or your Team Leader to explain the marking of the practice responses. Please refer to these comments when checking your practice responses. **Do not use the comments box for any other reason.**

   If you have any questions or comments for your Team Leader, use the RM Assessor messaging system.

10. Assistant Examiners should send a brief report on the performance of candidates to their Team Leader (Supervisor) by the end of the marking period. Please follow the direction of your Team Leader about which questions you should report on and how to submit your report. Your report should contain notes on particular strengths displayed as well as common errors or weaknesses.

11. Annotations available in RM Assessor. These **must** be used whenever appropriate during your marking.

Annotation	Meaning
	Correct
	Incorrect
BOD	Benefit of doubt
FT	Follow through
ISW	Ignore subsequent working (after correct answer obtained), provided method has been completed
M0	Method mark awarded 0
M1	Method mark awarded 1

M2	Method mark awarded 2
A1	Accuracy mark awarded 1
B1	Independent mark awarded 1
B2	Independent mark awarded 2
MR	Misread
SC	Special case
^	Omission sign
BP	Blank page
SEEN	Seen

For a response awarded zero (or full) marks a single appropriate annotation (cross, tick, M0 or ^) is sufficient, but not required.
For responses that are not awarded either 0 or full marks, you must make it clear how you have arrived at the mark you have awarded and all responses must have enough annotation for a reviewer to decide if the mark awarded is correct without having to mark it independently.

It is vital that you annotate standardisation scripts fully to show how the marks have been awarded.

Subject-Specific Marking Instructions

12. **M** marks are for using a correct method and are not lost for purely numerical errors.
A marks are for an accurate answer and depend on preceding **M** (method) marks. Therefore **M0 A1** cannot be awarded.
B marks are independent of **M** (method) marks and are for a correct final answer, a partially correct answer, or a correct intermediate stage.
SC marks are for special cases that are worthy of some credit.

13. The following abbreviations are commonly found in GCSE Mathematics mark schemes.

- **figs 237**, for example, means any answer with only these digits. You should ignore leading or trailing zeros and any decimal point e.g. 237000, 2.37, 2.370, 0.00237 would be acceptable but 23070 or 2374 would not.
- **isw** means **ignore subsequent working** after correct answer obtained and applies as a default.
- **nfww** means **not from wrong working**.
- **oe** means **or equivalent**.
- **rot** means **rounded or truncated**.
- **soi** means **seen or implied**.
- **dep** means that the marks are **dependent** on the marks indicated. You must check that the candidate has met all the criteria specified for the mark to be awarded.
- **with correct working** means that full marks **must not** be awarded without some working. The required minimum amount of working will be defined in the guidance column and **SC** marks given for unsupported answers.

14. Anything in the mark scheme which is in square brackets […] is not required for the mark to be earned, but if present it must be correct.

15. Unless the command word requires that working is shown and the working required is stated in the mark scheme, then if the correct answer is clearly given and is not from wrong working **full marks** should be awarded.

    Do not award the marks if the answer was obtained from an incorrect method, i.e. incorrect working is seen and the correct answer clearly follows from it.

16. Where follow through (**FT**) is indicated in the mark scheme, marks can be awarded where the candidate's work follows correctly from a previous answer whether or not it was correct. For questions with FT available you must ensure that you refer back to the relevant previous answer. You may find it easier to mark these questions candidate by candidate rather than question by question.

    Figures or expressions that are being followed through are sometimes encompassed by single quotation marks after the word *their* for clarity, e.g. FT 180 × (*their* '37' + 16), or FT 300 – √(*their* '52 + 72'). Answers to part questions which are being followed through are indicated by e.g. FT 3 × *their* (a).

17. In questions **with no final answer line**, make no deductions for wrong work after an acceptable answer (i.e. **isw**) unless the mark scheme says otherwise, indicated by the instruction 'mark final answer'.

18. In questions **with a final answer line and incorrect answer given**:

(i) If the correct answer is seen in the body of working and the answer given on the answer line is a clear transcription error allow full marks unless the mark scheme says 'mark final answer'. Place the annotation ✓ next to the correct answer.

(ii) If the correct answer is seen in the body of working but the answer line is blank, allow full marks. Place the annotation ✓ next to the correct answer.

(iii) If the correct answer is seen in the body of working but a completely different answer is seen on the answer line, then accuracy marks for the answer are lost. Method marks could still be awarded if there is no other method leading to the incorrect answer. Use the **M0**, **M1**, **M2** annotations as appropriate and place the annotation **×** next to the wrong answer.

19. In questions **with a final answer line**:

(i) If one answer is provided on the answer line, mark the method that leads to that answer. A correct step, value or statement that is not part of the method that leads to the given answer should be awarded **M0** and/or **B0**.

(ii) If more than one answer is provided on the answer line and there is a single method provided, award method marks only.

(iii) If more than one answer is provided on the answer line and there is more than one method provided, award marks for the poorer response unless the candidate has clearly indicated which method is to be marked.

20. In questions with **no final answer line**:

(i) If a single response is provided, mark as usual.

(ii) If more than one response is provided, award marks for the poorer response unless the candidate has clearly indicated which response is to be marked.

21. When the data of a question is consistently misread in such a way as not to alter the nature or difficulty of the question, please follow the candidate's work and allow follow through for **A** and **B** marks. Deduct 1 mark from any **A** or **B** marks earned and record this by using the **MR** annotation. **M** marks are not deducted for misreads. If a candidate corrects the misread in a later part, do not continue to follow through, but award **A** and **B** marks for the correct answer only.

22. Unless the question asks for an answer to a specific degree of accuracy, always mark at the greatest number of significant figures even if this is rounded or truncated on the answer line. For example, an answer in the mark scheme is 15.75, which is seen in the working. The candidate then rounds or truncates this to 15.8, 15 or 16 on the answer line. Allow full marks for the 15.75.

23. Ranges of answers given in the mark scheme are always inclusive.

24. For methods not provided for in the mark scheme (including visual representations such as bar models, ratio tables, etc) give as far as possible equivalent marks for equivalent work. If in doubt, consult your Team Leader.

25. If in any case the mark scheme operates with considerable unfairness consult your Team Leader.

Question			Answer	Mark	Part marks and guidance	
1	(a)		36	1		
1	(b)		20 or 25	1		Accept 20 and 25 with no extras
2	(a)		2	1		Condone +2
2	(b)		156	1		
2	(c)		206	1		
2	(d)		10.08	1		
3	(a)		35	1		
3	(b)		Line drawn to 55mm for May	1		Mark intention Condone freehand Allow slight inaccuracy, end of line should be on or within overlay Do not allow horizontal line drawn from 55
3	(c)		160	2	**FT** t*heir* 35 [+] 70 [+] 55 correctly evaluated **B1** for 35 [+] 70 [+] 55 or **B1FT**: t*heir* 35 [+] 70 [+] 55	FT for 2 marks "their 35" from 3(a) Values could be given on diagram in 3b
4			24	2	**M1** for 6 × 4	Extra incorrect work e.g. $\frac{6\times4}{2}$ is M0
5	(a)	(i)	35 000	1		
5	(a)	(ii)	0.203	1		
5	(a)	(iii)	400	1		

Question			Answer	Mark	Part marks and guidance	
5	(b)		2 hours 15 minutes	3	**B2** for 2.25[hours], $2\frac{1}{4}$ [hours] or 135[mins] or **M1** for 90 ÷ 40 oe or for *their* decimal hours correctly converted or for *their* minutes correctly converted to hours and minutes If 0 scored **SC1** for answer 2 hr 25 mins	Condone incorrect units for distance e.g. 9 ÷ 4 or $\frac{9}{4}$ Decimal hours must be > 0 their minutes must be > 60
6	(a)	(i)	F	1		For all (a) only condone the following values: Condone 1
6	(a)	(ii)	E	1		Condone 0.5
6	(a)	(iii)	A	1		Condone 0
6	(b)		24	2	**M1** for 8 + 8 + 8 oe or 16 + 2 + 6 If 0 scored **SC1** for answer any multiple of 3 > 24	
7	(a)		$\frac{13}{21}$ oe	2	**M1** for $\frac{7k}{21k} + \frac{6k}{21k}$	Where k is an integer ≥ 1 isw attempts to convert after the correct answer seen
7	(b)		$\frac{7}{16}$ cao	2	**M1** for $\frac{35}{80}$ o.e	e.g. $\frac{2800}{6400}$ for M1
8	(a)	(i)	59	1		Condone extra correct terms e.g. 176, ...
8	(a)	(ii)	7	2	**M1** for add 1 then divide by 3 soi	Allow embedded answer for M1: e.g.: $7 \times 3 - 1 = 20$

Question			Answer	Mark	Part marks and guidance	
8	(b)		5*n* oe	1		Condone poor notation e.g. 5 × *n* , *n* = 5*n,* 5*n* + 0, 5*n* – 0. oe e.g. n + n + n + n + n
9	(a)		2	1		
9	(b)		Correctly completes frequency tree with Football 45 Hockey 35 Athletics 33 Athletics 21	4	**B1** for each correct entry OR **M1** for option 1 sums to 80 or option 2 sums to 80 and **M1FT** *their football* – 12 and *their* hockey – 14	Do not allow empty boxes to imply 0. FT dep on no negative answers
10	(a)		Candidate clearly shows that: 27 + 560 = 587	4	**M2** for [£]0.08 × 7000 or 8[p] × 7000 and [£]0.27 × 100 or 27[p] × 100 or **M1** for [£]0.08 × 7000 or [£]0.27 × 100 or 8[p] × 7000 or 27[p] × 100 **B1** for £27 or [£]560 or for 2700[p] or 56 000[p]	"Shows that" requires evidence of at least **M2, B1** For M2, M1 & B1 if units (£ or p) are given they must be correct
10	(b)		9.5 [p]	4	**B1** for 25 × 100 or 2500[p] or [0].25 × 100 or £25 **M2** for (975 – *their* 25) ÷ 100 oe or **M1** for (975 – *their* 25) ÷ 10 000 oe If **0 or 1** scored, instead award **SC2** for figs 95 as final answer	Condone answer of 9 or 10 after 9.5[p] or [£]0.095 seen Ignore units for M2 and M1 M2 Implied by 950 ÷ 100 M1 implied by 950 ÷ 10,000 or 0.095

Question			Answer	Mark	Part marks and guidance	
11	(a)		Triangle drawn with vertices at (4, 1), (8, 1), (4, 7)	3	**B2** for scale factor 2 but wrong centre or for correct centre but wrong scale factor or for 3 correct plots but no triangle drawn OR **B1** for 2 vertices correct	Condone freehand and mark intention e.g. for a translation of the correct image e.g. proportionate triangle within pink overlay lines For B2 and B1 image must fit entirely on grid
11	(b)		$\frac{1}{2}$ oe and (0, 1)	2	**B1** for each	Do not accept ÷2 as oe Condone missing brackets for co-ordinate
12	(a)		60	2	**M1** for 0.2 × 300 oe	e.g. $\frac{300}{5}$. Final answer $\frac{60}{300}$ implies M1
12	(b)		Fair/Yes oe and valid reason	1	**FT** *their* 60 from 12(a) to appropriate conclusion with correct reasons.	Candidates must either: compare their answer to 12(a) approximately to the number 58 or compares their 12(a) answer to 58 and correctly explain why the spinner is or isn't fair or state that 300 spins is enough/a lot of spins Accept "maybe/don't know because 300 is not enough spins" Do not allow incorrect statements See appendix 1

Question			Answer	Mark	Part marks and guidance	
13	**(a)**	**(i)**	32	**2**	**M1** for 2 × 2 × 2 × 2 × 2	May be completed in stages
13	**(a)**	**(ii)**	10	**1**		
13	**(b)**		y^8	**1**		
13	**(c)**		[p=] –2	**2**	**B1** for 5^{-1} or answer 5^{-2} or **M1** for [5^p =] $\frac{1}{25}$ or 5^{p+1} or for $p + 1 = -1$ oe	
14			$\frac{8}{64}$ cao	**3**	**B2** for a fraction with numerator a cube number >1 **and** denominator a square number as final answer or for $\frac{8}{64}$ seen in workings but not their final answer OR **B1** for a fraction with numerator a cube number >1 **or** denominator a square number as final answer **B1** for answer $\frac{1k}{8k}$ OR **B1** for [1,] 8,27,64, [125] **B1** for [1,] 4,9,16,25,36,49,64,81,[100]	Condone $\frac{8}{64} = \frac{1}{8}$ on answer line for 3 marks e.g. answers $\frac{27}{36}$, $\frac{64}{25}$ scores B2 For B1 allow e.g. $\frac{x}{64}$ or $\frac{\square}{64}$ e.g. answer $\frac{2}{16}$ scores B1B1 Where k is an integer >1 No other numbers are allowed in these lists

Question			Answer	Mark	Part marks and guidance	
15	(a)		30	3	**M2** for $\frac{90}{60+150+90}$ [× 100] oe or **M1** for 60 + 150 + 90 oe seen	M2 implied by 0.3 oe M1 for 300 seen
15	(b)		200	3	**M2** for $150 \div \frac{100-25}{100}$ oe or **M1** for $\frac{100-25}{100}$ oe isw	M1 implied by 75%, $\frac{75}{100}$ or 0.75
16			30 + 22*n* oe final answer	2	**B1** for final answer 30 + *kn* or *k* + 22*n* (*k* > 0) or for correct answer seen then spoiled If 0 scored, **SC1** for $30 + 22^n$	Ignore units Condone poor notation, use of other letters for 2 marks or B1 e.g. 30 + 22 × *n*, 30 + 22*y*, *n* = 30 + 22*n*

Question			Answer	Mark	Part marks and guidance	
17			1.6 with correct working	5	**M2** for $\frac{79.6-2\times5}{3.4}$ oe or **M1** for 79.6 – 2 × 5 oe implied by 69.6 AND **B1** for 20 [. …] or [total length of books =] 68 [cm] AND **M1** for 79.6 – (*their* 20 × 3.4 + 2 × 5) If **0** or **1** scored, instead award **SC2** for answer 1.6 with no working or insufficient working	"Correct working" requires evidence of at least **M2** For M2 allow for use of trials to try to make 69.6 e.g. 3.4 × 20 [= 68] with 79.6 – 2 × 5 oe seen Accept attempt with repeated addition/subtraction of 3.4 for M2 isw using estimation only after correct values shown for M2 20[. …] seen or used as max number of books For B1 ignore remainders with 20 68 must be *their* total length of books and not just a value in working *their* 20 must be written and working shown for M1. M1 Dep on answer < 3.4 Could be implied by e.g. repeated subtraction Alternative method: **M2B1M1** or **M2B0M1** depending on "20" for ($\frac{79.6-2\times5}{3.4}$ – *their* 20) × 3.4 Alt scheme if <u>consistent</u> omission of two paperweights or one paperweight with no adjustment later **M1** for $\frac{79.6[-5]}{3.4}$ oe **B2** for answer 11.6 or **B1** for 68 [cm] OR **M1** for $\frac{79.6[-5]}{3.4}$ oe **B1** for 23.[…] ignore remainders or for 78.2 or 21.[…] ignore remainders or for 71.4 **A1** for answer 1.4 or 3.2

Question			Answer	Mark	Part marks and guidance	
18			The two events are not mutually exclusive oe and $\frac{6}{10}$ oe	2	**B1** for correct reason or $\frac{6}{10}$ oe	e.g. He has counted the same card/number/20 twice It should be $\frac{1}{10}+\frac{5}{10}$ or $\frac{2}{10}+\frac{4}{10}$ No contradictory statements for the reason See appendix 2
19	(a)		30	3	**M2** for $\frac{4\times60}{40}\times5$ oe or **M1** for interpreting the proportional relationship given e.g. 1 figure takes 8 mins or for $\frac{4\times60}{40}$ [×5] oe or $\frac{5\times60}{40}$ [×4] oe	10 figures take 80 mins, 7.5 figures take 1 hr etc
19	(b)		108	3	**M2** for $40\times\frac{15}{5}\times\frac{100-10}{100}$ oe **M1** for $\frac{90}{100}\times$ *their* time or [*their* time –] $\frac{10}{100}\times$ *their* time seen If 0 scored, **SC1** for answer 132	M2 e.g. 3 × 0.9 × 40 or 7.2 × 15 *their* time = 8, 40 or 120 M1 implied by 12, 36, 4, 7.2, 0.8 seen or as part of a subtraction

Question			Answer	Mark	Part marks and guidance	
20			Reason includes $a4$ should be written as $4a$ oe or the 4 is written after the a oe and $6 \times b$ should be written as $6b$ oe or the 6 and b should not be separated oe	**2**	**B1** for correct explanation for one term $a4$ should be written as $4a$ oe or the 4 is written after the a oe or $6 \times b$ should be written as $6b$ oe or the 6 and b should not be separated oe or correct expression written $4a + 6b$	Must refer to error in each term for 2 marks Incorrect statements apply penalty 1 mark if 2 marks earned See appendix 3
21	**(a)**		$x^2 + 3x - 5x - 15$ $[= x^2 - 2x - 15]$	**1**		All four terms must be seen Could be seen in a grid
21	**(b)**		$^-15$ [y-intercept] -3 and 5 [roots]	**1** **1**	 Must be in correct place.	Allow (0, -15) Allow (-3, 0) and (5, 0)
21	**(c)**		(1, $^-16$)	**2**	**B1FT** for 1 **B1FT** for $^-16$	**B1FT** is mid-point of their two roots from 12(b) provided one is positive and one negative. *Their* 1 must be > 0 **B1FT** for their value of x *their* -16 must be < 0

Question			Answer	Mark	Part marks and guidance	
22			28[cm] with correct working	6		Correct working requires evidence of at least **M1M1A1M1** or **M1M1A1M2**
					M1 for $5x + 4 = 3x + 7$ **M1** for $5x - 3x = 7 - 4$ oe	FT *their* equation if wrong sides equated Accept only: 4x - 1 = 5x + 4 or 4x - 1 = 3x + 7
					A1 for $x = 1.5$ oe	After **M1**, $x = 1.5$ implies **M1M1A1** Do not penalise if their value of x is not subsequently used in their work leading to an **algebraic** final answer e.g. 12x + 10.
					M1 for $5x + 4 + 3x + 7 + 4x - 1$ soi	implied by $12x + 10$
					M1 for substitution of *their x* into $5x + 4$ or $3x + 7$ or $4x - 1$ or *their* 12x + 10	*their x* must be > 0 and clearly stated as $x = \ldots$ Substitution of their x into $5x + 4$, $3x + 7$ and $4x - 1$ and then adding implies **M1 M1**. <u>Alternative method using trials:</u>
					If **0** or **1** scored, instead award **SC2** for answer 28 If **0** scored, instead award **SC1** for $x = 1.5$	In all trials x must be > 0 **M1M1A1** for both $5x + 4$ and $3x + 7$ correctly evaluated with $x = 1.5$ or **M1M1** for three correctly evaluated trials of both $5x + 4$ and $3x + 7$ with consistent value of x or **M1** for two correctly evaluated trials of both $5x + 4$ and $3x + 7$ with consistent value of x AND **M2** dep on at least **M1** for their x substituted into their 12x + 10 oe or **M1** dep on at least **M1** for their x substituted into 4x -1 **M1** dep on previous **M1** adding their three lengths

Question			Answer	Mark	Part marks and guidance	
23			60 [°] with correct working	**5**		Correct working requires evidence of at least **M2A1M1**
					M2 for $\sqrt{12^2 + 5^2}$ oe	Condone stating 5, 12, 13 or $5^2 + 12^2 = 13^2$ for M2
					or **M1** for $5^2 + 12^2$ oe	After M1, [BC =] 13 implies M2A1
					A1 for [BC =] 13	[BC =] 13 might be on the diagram
						Do not penalise if Pythagoras is not subsequently used in work leading to their answer.
					M1 for $\frac{their13}{26}$ = cos […] oe	
					If **0** or **1** scored, instead award **SC2** for final answer of 60 nfww If **0** scored, instead award **SC1** for [BC =] 13	Note that: 5 x 12 = 60 is SC0

APPENDIX 1 Question 12b

	12(a)	Response	Mark
A	60	Yes – The probability is 60 therefore 58 out of 300 spins is fair (BOD use of "probability" has implied approximation)	**1**
B	60	I think so – I got 60 if it was fair so being two out is pretty fair. (shows the approximate relationship)	**1**
C	60	Fair – it is close to my estimate and it wouldn't 100% land on it every time. (shows the approximate relationship)	**1**
D	60	Yes – as there is only 5 numbers they should be expected to land on each number roughly the same amount of times (The words "expected" and "roughly" imply the approximate relationship)	**1**
E	60	Yes – it was expected to land on 1 60 times and it landed 58 times. (Stated both numbers and implied approximation)	**1**
F	60	Yes – if it was fair it would have landed on one 60 times but it's close enough. ("Close enough" implies approximation)	**1**
G	60	Yes – it's an estimate not a definite answer. (No approximation or comparison)	**0**
H	60	Yes – unless you spin it infinite times your result will never be 100% correct. (Incorrect can imply fairness from a sample)	**0**
I	60	No – if it was a completely a fair spinner it would land on one 60 of the 300 spins. (Incorrect is stating that it has to land on one exactly 60 times)	**0**
J	60	No – 58 landed on 1 meaning the other numbers on the spinner landed will be different amount of times, if it was a fair spinner 60 would be the correct answer. (Incorrect is stating that it has to land on one exactly 60 times)	**0**
K	60	Yes - It spins 300 times (Not enough - needs to comment that 300 spins is enough to be reliable)	**0**
L	60	Yes – is inside of 60 times what could land (The use of the word "inside" does not imply approximation)	**0**
N	5	Yes – if you divide the 300 spins divided by 5 it is 60 and he was almost on 60 so is fair. (Not a strict FT & use of "almost")	**1**
M	12	No – it landed on the number 1 too often (Does not compare their 12(a) to justify the "too often" statement)	**0**
O	20	No – if the spinner was fair it wouldn't be 58 times (Does not explain why)	**0**
P	50	No – if it was a fair spinner then it would have landed on number one 49-51 times. (Implied approximation from 49-51)	**1FT**
Q	58	Yes – it lands on the number 1 the exact number of time.(allow ONLY as their answer to 12(a) is 58)	**1FT**
R	58	Yes – because its roughly about 50 spins given for each number (50 is incorrect (should be 60)- no incorrect statements)	**0**
S	75	Yes – it is not far off (Not enough for approximation as they do not explain which numbers they are comparing)	**0**

APPENDIX 2 Question 18

	Response	Mark
A	Some multiples of 5 may intersect with the five even numbers so it may not be $\frac{5}{10}$ BOD	**1**
B	One of the multiples of 5 could be even BOD	**1**
C	He has counted the same card more than once	**1**
D	20 is repeated/in both	**1**
E	He did not minus the repeated card	**1**
F	He forgot to take away the multiples of 5 from the even numbers	**1**
G	They have counted 20 twice and they have not added the fractions correctly (we can ignore the second part of the statement as it does not contradict they have counted 20 twice)	**1**
H	Some even numbers are also numbers that are multiples of 5	**1**
I	Even numbers are also numbers that are multiples of 5 (not true – only some even numbers are)	**0**
J	The two multiples of 5 are also even numbers (incorrect statement)	**0**

APPENDIX 3 Question 20

Answers that imply the brackets have been multiplied incorrectly treat as incorrect statements

Do not accept for 2 marks 4a + 6b alone without some explanation but allow for B1

	Response	Mark
A	He didn't put the 6 and the *b* together to show it is multiplied. He put the 4 after the *a* when it should be before (oe)	**2**
B	Because they separated the *b* from the 6 and put the a in front of the 4	**2**
C	In algebra the 4 should come before the a so it is 4*a*, the multiplication sign is not needed so it should be 6*b* 4*a* + 6*b* should not be simplified so the answer is 2*a* + 3*b* (penalty 1 after correct explanation for 2 marks then incorrect statement)	**1**
D	It is correct 4*a* + 6*b*	**B1**
E	It is not written correctly, it should be 4*a* + 6*b* (B1 for 4*a* + 6*b*)	**B1**
F	The answer is 4*a* + 6*b*	**B1**
G	Because numbers have to be placed in front of letters BOD for term in *a* term in *b* not explained	**B1**
H	Shows 4*a* + 6*b* in working and then 'because they can further simplify the answer by 2(2*a* + 3*b*)'	**B1**
I	It should be 4*a* + 6*b*, the student has not timesed the 6 and the b together	**B1**
J	It is 6*b* not 6 x *b* – it has not been fully simplified	**B1**
K	a4 is incorrect as 4 is the coefficient – it should be 4*a*	**B1**
L	The answer should be 4*a* + 6*b* , he did the 2*b* calculation wrong he should have multiplied them together by 3 to get the answer	**B1**
M	The number must be before the letter 4*a* + 6*b*	**B1**
N	4*a* + 6*b* written above answer lines and answer line blank	**B1**
O	She has put 4 after the *a* and has only multiplied the number 2 by 3 without the *b* (one correct statement about *a*)	**B1**
P	He has put 4*a* as a power and 6 x *b* should be 6*b*, should be 4*a* + 6*b* (B1 for 4*a* + 6*b*)	**B1**
Q	They should not be separating the 6 and the *b* it should be 6*b*	**B1**
R	The contents of the bracket were not expanded correctly it should be 2 x 3*b* = 6*b* (not explained error how term is written)	**0**
S	He has written *a*4 and 6 × *b* (further explanation about the error needed)	**0**

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