

Mark scheme for 1MA1 Higher themed papers: Combinations

GCSE Mathematics (1MA1)

Themed papers – Combinations

Compiled from student-friendly mark schemes

Please note that this mark scheme is not the one used by examiners for making scripts. It is intended more as a guide to good practice, indicating where marks are given for correct answers. As such, it doesn't show follow-through marks (marks that are awarded despite errors being made) or special cases.

It should also be noted that for many questions, there may be alternative methods of finding correct solutions that are not shown here – they will be covered in the formal mark scheme.

NOTES ON MARKING PRINCIPLES

Guidance on the use of codes within this mark scheme

M1 – method mark. This mark is generally given for an appropriate method in the context of the question. This mark is given for showing your working and may be awarded even if working is incorrect.

P1 – process mark. This mark is generally given for setting up an appropriate process to find a solution in the context of the question.

A1 – accuracy mark. This mark is generally given for a correct answer following correct working.

B1 – working mark. This mark is usually given when working and the answer cannot easily be separated.

C1 – communication mark. This mark is given for explaining your answer or giving a conclusion in context supported by your working.

Some questions require all working to be shown; in such questions, no marks will be given for an answer with no working (even if it is a correct answer).

Question 1 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$\begin{array}{r} 3325 \\ 19 \times 25 \end{array}$	P1	This mark is given for a method to find the number of combinations
	7	A1	This mark is given for the correct answer only

Question 2 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$9 \times 15 = 135$	M1	This mark is given for one correct calculation
	$15 \times 8 = 120$	M1	This mark is given for all three calculations correct
	$9 \times 15 \times 8 = 1080$		
	$135 + 120 + 1080 = 1335$	C1	This mark is given for the correct answer only

Question 3 (Total 2 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$215 \div 17 = 12.6$	P1	This mark is given for a process to find the number of rose trees
	No, 12.6 is not a whole number (and a whole number of plants must be bought)	C1	This mark is given for a correct conclusion, supported by correct reasoning

Question 4 (Total 4 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	$5 \times 5 \times 5 = 5^3$	M1	This mark is given for a method to find the number of three-digit combinations
	125	A1	This mark is given for the correct answer only
(b)	$5 \times 4 \times 3$	M1	This mark is given for a method to find the number of combinations with three different digits
	60	A1	This mark is given for the correct answer only

Question 5 (Total 3 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
	$95 \times 94 (= 8930)$ or $87 \times 86 (= 7482)$	M1	This mark is given for a method to find the combinations for any two roles
	$95 \times 94 \times 87 \times 86$	M1	This mark is given for a method to find the total of all combinations
	66814260	A1	This mark is given for the correct answer only

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Performance data:

Q	Taken from			Total Marks available	TOPIC	Spec Ref	AO	% Mean marks	Edexcel mean averages Marks of candidates who achieved grade:										
	Q	Series	Paper						ALL	9	8	7	6	5	4	3	2	1	U
1	14	Nov 2019	2H	2	Number	N5	1	62	1.24	2.00	1.89	1.82	1.74	1.49	1.08	0.82	-	-	0.44
2	11	Nov 2018	2H	3	Number	N5	2	60	1.80	2.90	2.71	2.67	2.35	2.19	1.87	1.23	-	-	0.53
3	11	June 2017	3H	2	Number	N5	3	44	0.88	1.68	1.36	1.07	0.85	0.65	0.43	0.25	-	-	0.16
4a	16a	June 2019	1H	2	Number	N5	1	46	0.91	1.78	1.39	1.08	0.84	0.64	0.45	0.27	-	-	0.17
4b	16b	June 2019	1H	2	Number	N5	1	24	0.48	1.43	0.87	0.55	0.36	0.25	0.16	0.10	-	-	0.05
5	18	Mock Set 1	2H	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				14					5.31	9.79	8.22	7.19	6.14	5.22	3.99	2.67	-	-	1.35