

1. **Nov/2022/Paper\_0606\_11/No.10**

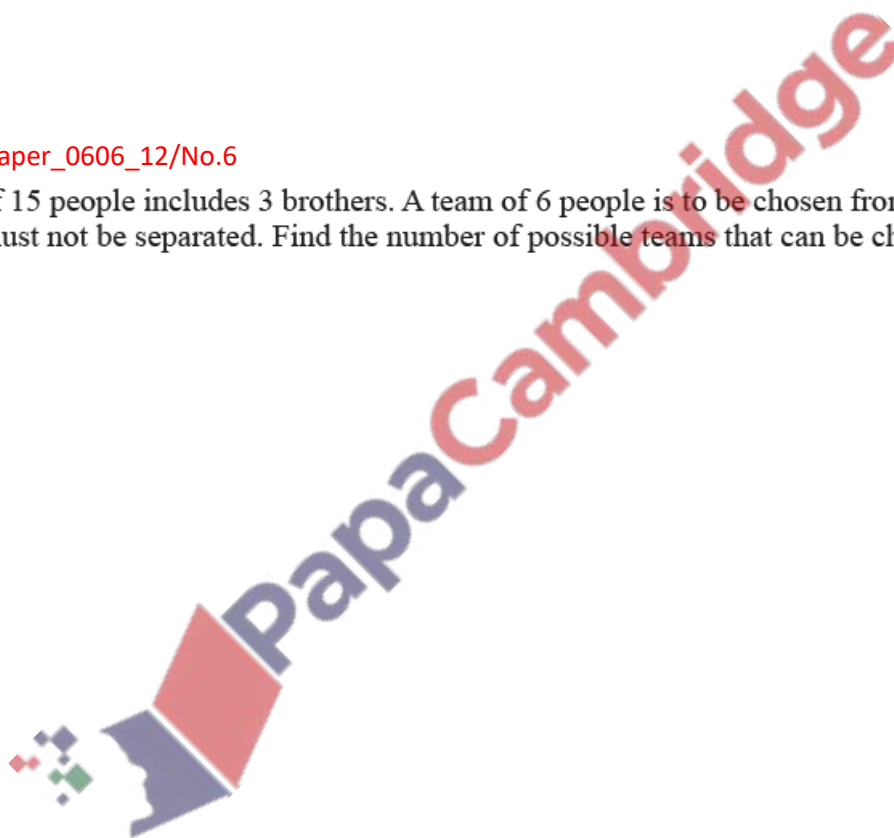
Given that  $65 \times {}^n C_5 = 2(n-1) \times {}^{n+1} C_6$ , find the value of  $n$ .

[3]

2. **Nov/2022/Paper\_0606\_12/No.6**

A group of 15 people includes 3 brothers. A team of 6 people is to be chosen from this group. The three brothers must not be separated. Find the number of possible teams that can be chosen.

[3]



3. Nov/2022/Paper\_0606\_13/No.9

A 6-character password is to be formed from the following characters.

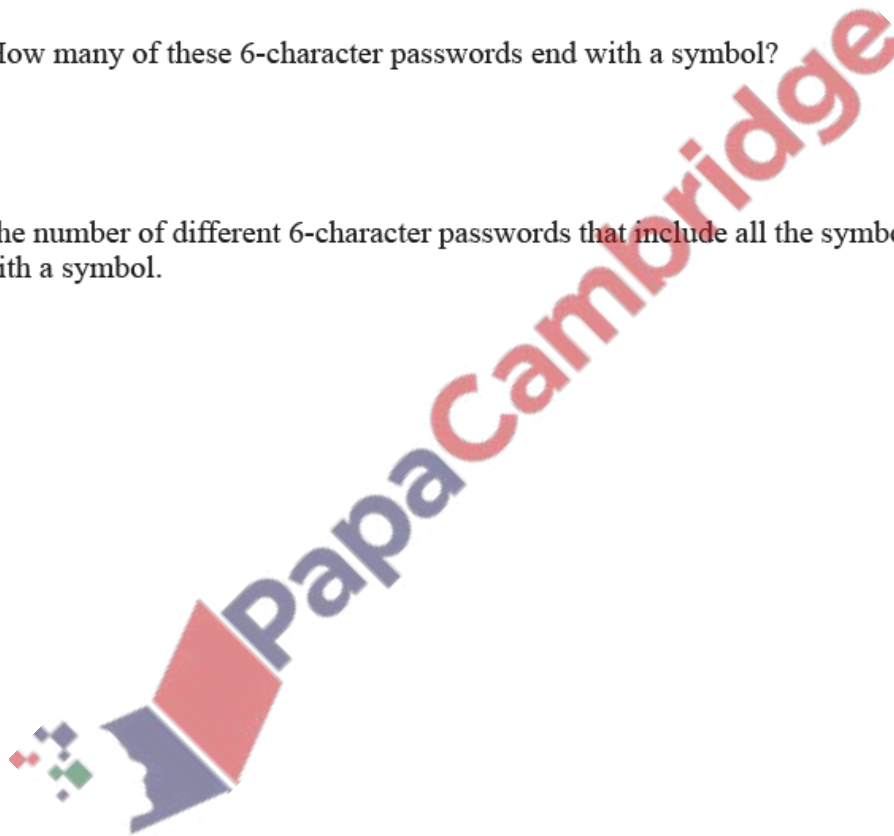
Letters	A	B	C	D
Numbers	1	2	3	4
Symbols	*	#	\$	£

No character may be used more than once in any password.

(a) (i) Find the number of different 6-character passwords that can be formed. [1]

(ii) How many of these 6-character passwords end with a symbol? [1]

(b) Find the number of different 6-character passwords that include all the symbols, but do not start or end with a symbol. [2]

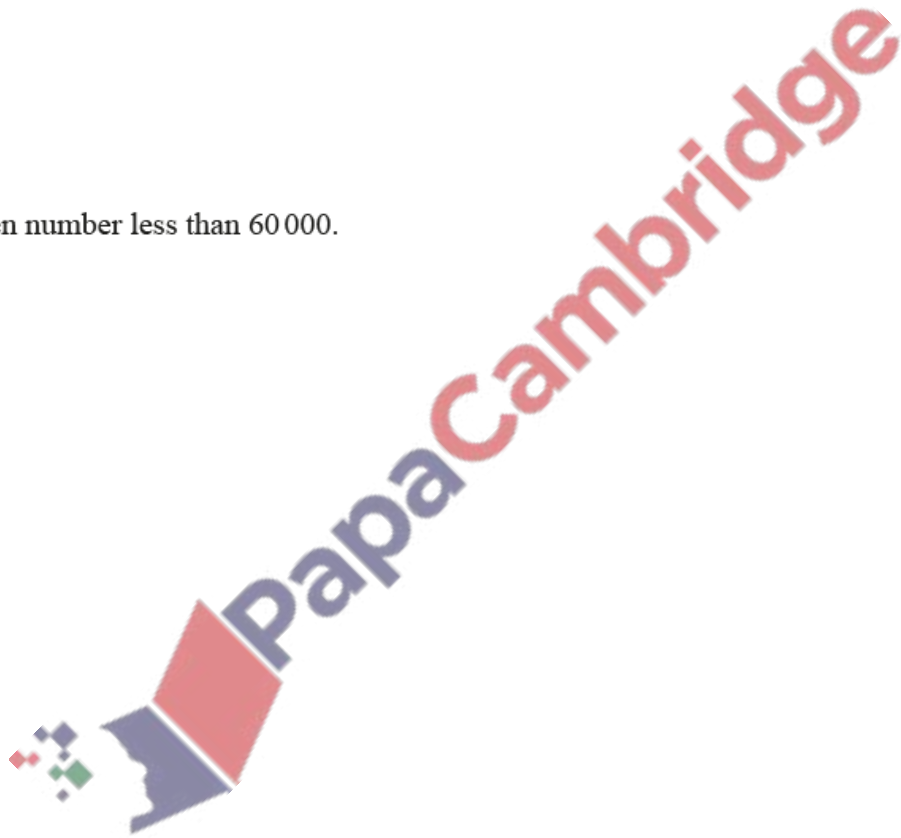


4. Nov/2022/Paper\_0606\_21/No.11

A 5-digit code is to be formed using 5 different numbers selected from 1, 2, 3, 4, 5, 6, 7, 8. Find how many possible codes there are if the code forms

(a) a number less than 60 000 that ends in a multiple of 3, [3]

(b) an even number less than 60 000. [3]



5. Nov/2022/Paper\_0606\_22/No.6

A 4-digit code is to be formed using 4 different numbers selected from 2, 3, 4, 5, 6, 7, 8 and 9. Find how many possible codes there are if the code forms

(a) a number that is odd and greater than 5000, [3]

(b) a number greater than 5000 with a last digit that is prime. [3]

6. Nov/2022/Paper\_0606\_23/No.7

Given that  ${}^n C_4 = 13 \times {}^n C_2$ , find the value of  ${}^n C_8$ . [5]