EXERCICE Which of the following statements about the HashCode method, which calculates the hash value of an object in a class, are correct:

A. Applying to different objects (according to equals) can return the same integer.
B. Applying to different objects (according to equals) always returns a different integer.

EXERCICE Which of the following statements about the `indiceHash` method, which calculates the hash index of the key `c` of an entry, are correct:

A. It always returns as the valid hash index of `c`, the value `c.hashCode()% elArray.length`

B. It converts the hash value of `c` (`c.hashCode()`) to a valid index of `elArray`

C. In order to obtain a valid hash index for `c`, it always takes into account the overflow problems that can cause the calculation of the hash value of `c` (`c.hashCode()`)

EXERCICE Select the phrases that are true.

A. Two keys `c1` and `c2` such that `c1.equals(c2)` have the same Hash index.

B. Two keys `c1` and `c2` such as !`c1.equals(c2)` have different Hash index.

C. For two keys `c1` and `c2` having the same Hash index is necessarily fulfilled that `c1.equals(c2)`

D. For two keys `c1` and C2 that have different Hash index is necessarily fulfilled that !`c1.equals(c2)`

EXERCICE Represent a collection of 100 entries using a Hash table by chaining with a load factor equal to 0.75. What is the best size of `elArray` for this case?

A. 100
B. 101
C. 211
D. 133
E. 137

EXERCICE The police want to use a TablaHash in order to be able to efficiently consult the owner of a given car.

- Cars are identified by their license plate, which consists of a number (integer) and a sequence of letters (string). It is important to keep these two attributes separated to accelerate other possible operations.
- From the owner of the car we only want to know his name.

Indicate the type of the hash table and design the needed.

EXERCICE Insert the following integers 9, 7, 3, 17, 18, 16, 12, 10, 22 into a hash table of size 5 and with the hashing function H(x) = x.

- Without rehashing, draw the table and calculate your load factor.
- If we do rehashing when the load factor is bigger than 1.5, increasing the capacity of the table to 11.

EXERCICE You want to know the entries of a Map, implemented by a hash table, whose value is equal to one given.

Implement a new method that returns a ListaConPI with the keys of the entries whose value is equal to one given.

EXERCICE Design a method in the TablaHash class that receives another MAP as a parameter and returns a new one that is the intersection of both, that is, containing the elements (same key and value) that are in both Maps.