1) In class we made the `fermat_fact(n)` function returning a factor of n using Fermat factorization. Employ `fermat_fact(n)` and `is_prime(n)` to define the functions[1]:

a) (80%) `fermat_factor_a(n)` printing a (non-necessarily ordered) list of the prime factors of `n` repeated according multiplicities. For instance, for `n=630` it could give `2,3,7,3,5`.

b) (+20%) `fermat_factor_b(n)` printing the factorization of `n` in the usual (ordered) way as in the function `factor` in Sage. For instance, for `n=630` it has to give `2 * 3^2 * 5 * 7`.

2) In a library the PIN is a string, say `pin`, of three characters encrypted in the magnetic stripe as a number given by the formula

```
Mod( 256^2*ord(pin[0]) + 256*ord(pin[1]) + ord(pin[2]) , 18121121)^7919
```

What is the PIN corresponding to `16479305`?

[1] Please send the answer to this challenge by email to `fernando.chamizo@uam.es` in a text file or in a Sage worksheet. The part b) requires some knowledge of Python. There is a Python cheat sheet in my web site.