Assignment for G (godkänt)

The Luhn algorithm, also known as modulus 10 algorithm, is a simple checksum formula used to detect errors in a variety of identification numbers, such as credit card numbers and swedish personal identity numbers (personnummer).

In a 10-digit personnummer (YYMMDD-nnnC), **YYMMDD** is the birth date, **nnn** is a serial number which is called birth number and the last digit (**C**) is a control digit. The control digit is calculate:

1. The numbers in the birth date and the birth number is alternately multiplied by 2 and 1.
2. Sum all the digits in each product. If a product is larger than 9, each digit in the number is used. For example, the number 13 will be 1 + 3
3. The single digit in the sum is subtracted from the number 10
4. The remainder of the integer division of the result of the previous step by 10 is the control bit.
5. For example: **811218-987**
   a. 8×2 + 1×1 + 1×2 + 2×1 + 1×2 + 8×1 + 9×2 + 8×1 + 7×2
   b. 16   1   2   2   2   8   18   8   14
   c. (1+6) + 1 + 2 +   2 + 2 + 8 + (1+8) + 8   + (1+4) = 44
   d. The control digit (C) is (10 - (44 % 10)) % 10 = **6**
   e. So the personnummer is **811218-9876**

Make a program to read personal identity numbers (personnummer) in the format of **YYMMDD-nnnC** from the terminal and check if the personnummer is correct or not. You need to calculate the control digit of the personnummer and compare it with the last digit of what the user has entered. If the calculated one and the one entered by the user are the same, it means that the personnummer is correct. Otherwise the entered personnummer is not a valid personnummer. Please note that the format of the personnummer shall also be checked.
No magic numbers!!!

Useful links:
1. [Swedish Personal Identity Numbers / Personnummer](#)
2. [Personnummer i Sverige](#)
3. [Personnummer generator](#)