

Mock Test

This is a mock test for which you will not get a grade. Test your knowledge and test how to submit your programs for assessment to the Moodle e-learning platform.

Create the following four programs. You have 40 minutes in total. Save the programs in the files with the names shown in parentheses (p1.py, p2.py, p3.py, ...). Submit the files to the Moodle platform.

Apart from the function definition, do not include any other statements in the files. To test the functions, you can, for example, create an additional program test.py, in which you can import the created modules and call the defined functions. Please do not upload test.py to the Moodle platform.

(p1.py) The credit card number consists of 16 digits. Define a function `f(card_number)` that masks the card number. The function returns a character string in which only the first two and the last four digits of the card number are visible. The remaining digits of the card number are replaced with an asterisk. Example:

```
f("5290312400019022") => "52*****9022"
```

(p2.py) The binary system uses two symbols to represent a number: 0 and 1. Define a function `f(binary_number)` that returns True if the given notation is a valid binary number, or false otherwise.

Example:

```
f("101101") => True
```

```
f("1311a10100") => False
```

(p3.py) The vending machine accepts 1, 2 and 5 PLN coins. Define the function `f(amount_to_pay)` that returns the minimum number of coins that can be used to pay for the purchased product.

Example:

```
f(23) => 6
```

```
f(8) => 3
```

```
f(2) => 1
```

```
f(0) => 0
```

(p4.py) Create a function `f(number, even)` that computes the sum of the digits of a number. When the value of the even parameter is True, the function returns the sum of the even digits. When the value of the even parameter is False, the function returns the sum of the odd digits. Example:

```
f(3124,True) => 6
```

```
f(3124,False) => 4
```

```
f(20576,False) => 12
```

```
f(20576,True) => 8
```

```
f(13115,True) => 0
```