Informatics 2, 1st midterm (2020-03-09)

The answers should fit next to the questions, if you use a separate paper let us know clearly!

Name:

Neptun:

1	2	3	4	5	6	$\sum$

1. What will be printed after these python commands? *(3 points)*

a)
```
n = 5
i = 1
s = 0
while s < n:
    s += 1
    i *= s
print(i)
```

b) For this one, choose the input as a two digit integer ending with `0`!

```
n = int(input())
l = []
for i in range(1, n):
    if n % i == 0:
        l.append(i)
print(l)
```

c)

```
print("Hello", end="")
print("János")
```

2. Write a python function called `isprime` with one parameter: `x`. Check whether `x` is an integer and positive, if so then return whether it is a prime or not (`True/False`). If the number does not satisfy the conditions then return `None` *(4 points)*

Examples:

```
>>> isprime(0)
>>> isprime(5)
True
>>> isprime(1)
False
```

3. Theoretical questions *(3 points)*

a) What is the difference between `list` and `tuple`?

b) What is the result of `type(2%1)`

c) How to write quotation mark in a string?

4. Write a function that decides whether a string contains a vowel, but not on the first place! The first letter of the string is irrelevant, but if any of the other letters is a vowel then return `True`. Otherwise return `False`. *(3 points)*

The input will contain only latin lowercase letters, vowels are: `aeiou`

```
def not_first_vowel(s):
```

Examples:

```
>>> not_first_vowel("a")
False
>>> not_first_vowel("abba")
True
```

5. Wite a function that counts down the square numbers from a given number to 1. *(3 points)*

If the input is exactly a square number, include that also.
Examples: `10` $\mapsto$ `[9, 4, 1]` and `9` $\mapsto$ `[9, 4, 1]`

```
def count_square_down(n):
```

6. There are 4 mistakes in the following code, what are they? *(4 points)*

Don't correct the mistakes, just mark them.

```
n = 12
while n != 1:
    print(n, end=space)
    if n % 2 == 0
        n = 2
      else:
        n = 3*n+1
print 1
```