Verkefni 0

Adding numbers

Write a function `sum_two(a,b)` that takes two integers as parameters and returns their sum.

Example

```
>>> sum_two(1,3)
4
>>> sum_two(4,3)
7
```

Multiples of 3 and 5

If we list all the natural numbers below 10 that are multiples of 3 or 5, we get 3, 5, 6 and 9. The sum of these multiples is 23.

Write a function `mod_sum(n)` that takes an integer as parameters and returns the sum of all multiples of 3 or 5 below n.

Example

```
>>> mod_sum(10)
23
```

No 3-sum

Write a function `sum_no_3` which takes a list of integers as a parameter. The function returns the sum of all the integers in the list except the ones that end with the digit 3.

Example

```
>>> sum_no_3([1, 13, 15, 1])
17
```

Sum first

Write a function `sum_first` which takes two parameters; a list of integers `lis` and an integer `n`. The function returns the sum of the first `n` elements of `lis`. If there are fewer than `n` elements in `lis`, the function returns the sum of all elements in `lis`.

Example

```
>>> sum_first([1, 13, 15, 1], 1)
1

>>> sum_first([1, 13, 15, 1], 3)
29
```

List product

Write a function `list_product` which takes two lists of integers, `lis1` and `lis2`, as parameters. You can assume the lists are of equal length, n. The function returns a list of length n, whose i-th element is the product of the i-th element of `lis1` and `lis2`.

Example

```
>>> list_product([1, 13], [4, 2])
[4, 26]

>>> list_product([1, 13, 15, 1], [4, 3, 2, 1])
[4, 39, 30, 1]
```

Remove empty strings

Write a function `remove_empty` that takes a list of strings and returns the same list, where empty strings have been removed.

Example

```
>>> remove_empty(['python', '', 'is', 'awesome', ''])
['python', 'is', 'awesome']
```

Secret code

In times of limited privacy you and your friend have come up with a secret code to communicate with each other. The code works as follows. You start by writing down your message. Then, after each letter in the message, you insert two random letters and send that message to your friend.

Write a function `decrypt` that takes a string as a parameter, containing a message encrypted with the method described above. The function returns the decrypted message.

Example

```
>>> decrypt('AQltQptoAaQPcmokPY ToaFKtBe WEdvAagrwpknDJ!yX')
'Attack at dawn!'
```

Gymnastics average

Write a function `gymnastics` which takes a list of integers as a parameter. The function returns the *gymnastics average* of the numbers in the list. The gymnastics average of a list of numbers is obtained as follows. If the list contains three or more numbers, remove one instance of the highest and lowest values in the list. The average of the remaining numbers, rounded **down** to the nearest integer, is the gymnastics average of the list.

Example

```
>>> gymnastics([2, 13])
7

>>> gymnastics([1, 13, 15, 2])
7
```

Boom!

Write a function `boom` which takes a single integer, n, as a parameter. The function returns the list of integers from 1 to n (inclusive), as strings, where all integers either divisible by 7 or containing the digit 7 have been replaced by the string `'boom!'`.

Example

```
>>> boom(20)
['1',
 '2',
 '3',
 '4',
 '5',
 '6',
 'boom!',
 '8',
 '9',
 '10',
 '11',
 '12',
 '13',
 'boom!',
 '15',
 '16',
 'boom!',
 '18',
 '19',
 '20']
```