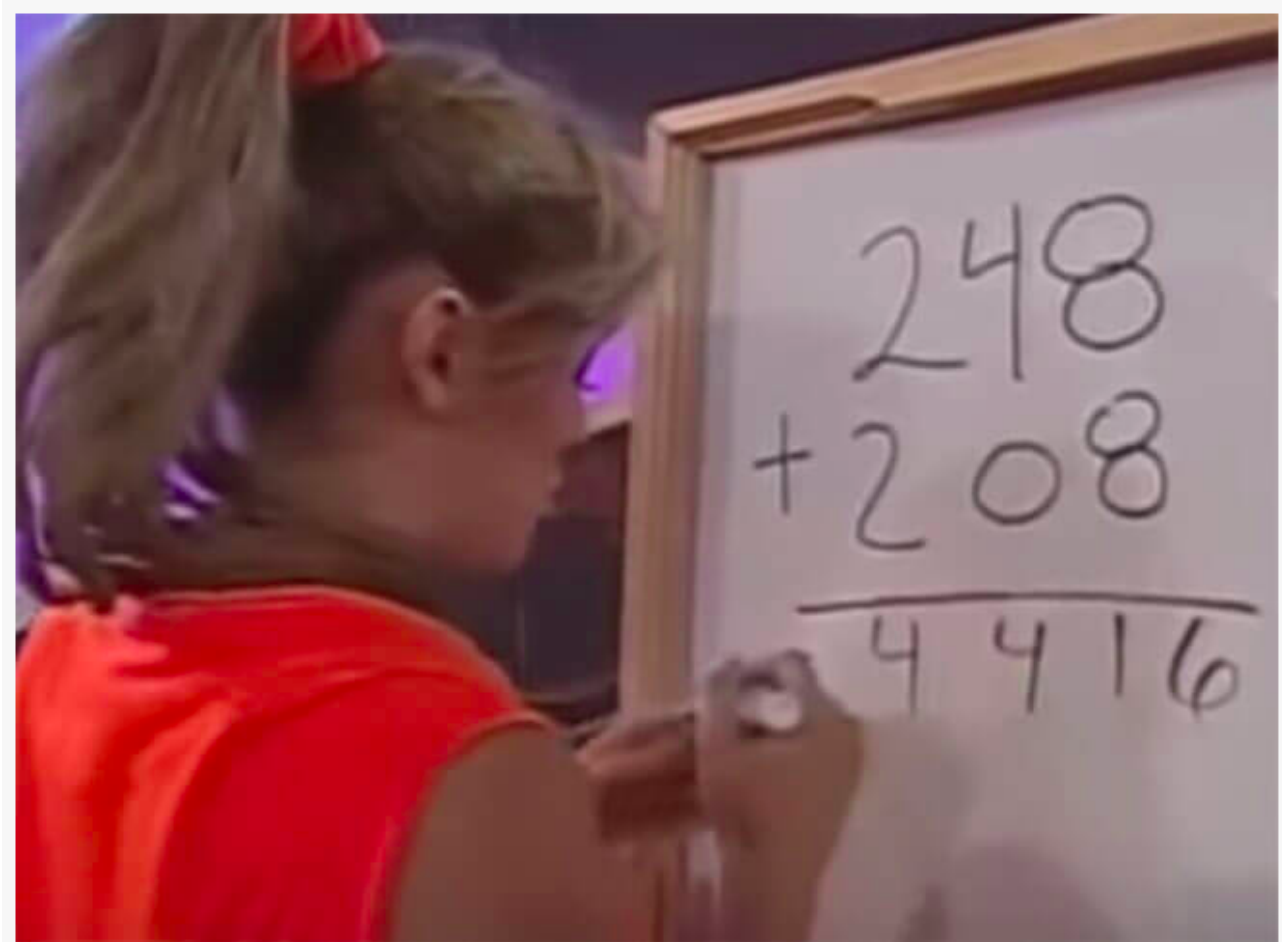


1. For this challenge, forget how to add two numbers together. The best explanation on what to do for this function is this meme:



### Examples

```
memesum(26, 39) 515
```

```
# 2+3 = 5, 6+9 = 15
```

```
# 26 + 39 = 515
```

```
memesum(122, 81) 1103
```

```
# 1+0 = 1, 2+8 = 10, 2+1 = 3
```

```
# 122 + 81 = 1103
```

```
memesum(1222, 30277) 31499
```

2. Given an integer, create a function that returns the next prime. If the number is prime, return the number itself.

### Examples

next\_prime(12) 13

next\_prime(24) 29

next\_prime(11) 11

# 11 is a prime, so we return the number itself.

3. If a person traveled up a hill for 18mins at 20mph and then traveled back down the same path at 60mph then their average speed traveled was 30mph.

Write a function that returns the average speed traveled given an uphill time, uphill rate and a downhill rate. Uphill time is given in minutes. Return the rate as an integer (mph). No rounding is necessary.

### Examples

ave\_spd(18, 20, 60) 30

ave\_spd(30, 10, 30) 15

ave\_spd(30, 8, 24) 12

4. The Kempner Function, applied to a composite number, permits to find the smallest integer greater than zero whose factorial is exactly divided by the number.

kempner(6) 3

$1! = 1 \% 6 > 0$

$2! = 2 \% 6 > 0$

$3! = 6 \% 6 == 0$

kempner(10) 5

$1! = 1 \% 10 > 0$

$2! = 2 \% 10 > 0$

$3! = 6 \% 10 > 0$

$4! = 24 \% 10 > 0$

$5! = 120 \% 10 == 0$

A Kempner Function applied to a prime will always return the prime itself.

kempner(2) 2

kempner(5) 5

Given an integer n, implement a Kempner Function.

### Examples

kempner(6)    3

kempner(10)    5

kempner(2)    2

5. You work in a factory, and your job is to take items from a conveyor belt and pack them into boxes. Each box can hold a maximum of 10 kgs. Given a list containing the weight (in kg) of each item, how many boxes would you need to pack all of the items?

### Example

boxes([2, 1, 2, 5, 4, 3, 6, 1, 1, 9, 3, 2])    5

# Box 1 = [2, 1, 2, 5] (10kg)

# Box 2 = [4, 3] (7kg)

# Box 3 = [6, 1, 1] (8kg)

# Box 4 = [9] (9kg)

# Box 5 = [3, 2] (5kg)