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# Chapter 1

## Functions

### 1.1 multiplicative – multiplicative number theoretic functions

#### 1.1.1 euler – the Euler totient function

**euler**(*n*: *integer*) → *integer*

Return the number of numbers relatively prime to *n* and smaller than *n*. In the literature, the function is referred often as  $\varphi$ .

#### 1.1.2 moebius – the Möbius function

**moebius**(*n*: *integer*) → *integer*

Return:

- 1 if *n* has odd distinct prime factors,
- 1 if *n* has even distinct prime factors, or
- 0 if *n* has a squared prime factor.

In the literature, the function is referred often as  $\mu$ .

#### 1.1.3 sigma – sum of divisor powers)

**sigma**(*n*: *integer*, *m*: *integer*) → *integer*

Return the sum of *m*-th powers of the factors of *n*. In the literature, the function is referred often as  $\sigma$ .

# Bibliography