Multiplicative Functions and More Modular Arithmetic in PARI

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1 Multiplicative Functions

`eulerphi(x)` computes $\phi(x)$, the Euler ϕ-function evaluated at x

`sigma(x)` computes $\sigma(x)$, the sum of the positive divisors of x

`sigma(x,k)` computes $\sigma_k(x)$, the sum of the k^{th} powers of the positive divisors of x

2 More Modular Arithmetic

`chinese(Mod(a,m),Mod(b,n)` performs the chinese remainder theorem on a mod m and b mod n if it's possible

`znprimroot(p)` computes a primitive root mod p

`znorder(Mod(a,p))` computes the exponent (order) of a mod p

`znlog(Mod(a,p),Mod(b,p))` computes the index of a mod p relative to the primitive root b mod p

`kronecker(a,p)` computes the Legendre symbol $(\frac{a}{p})$

`polrootsmod(f,p)` compute the roots of the polynomial f modulo the prime p