

DIVISION MIT REST

```
> irem(34,7);
```

```
6
```

```
> iquo(34,7);
```

```
4
```

```
> irem(-34,7);
```

"irem" markieren, "Help" anklicken, dann "Help on irem": Beachte den Unterschied zur Definition des Restes im Skriptum!

```
-6
```

```
> iquo(-34,7);
```

```
-4
```

```
> irem(987633476374837489503495839405,34859301723578);
```

```
12279458728599
```

```
> iquo(987633476374837489503495839405,34859301723578);
```

```
28331992539793927
```

```
> restart;
```

```
rest:=proc(a,b)
```

(a und b sind positive ganze Zahlen; berechnet werden der ganzzahlige Quotient von a und b sowie der Rest von a nach Division durch b)

```
local c,d,m;
```

```
> m:=0;
```

```
c:=a; d:=b;
```

```
while c>=d do c:=c-d;
```

```
m:=m+1;
```

```
od;
```

```
print(m); print(c);
```

```
end proc;
```

```
rest := proc(a, b)
```

```
local c, d, m;
```

```
m := 0; c := a; d := b; while d ≤ c do c := c - d; m := m + 1 end do; print(m); print(c)
```

```
end proc
```

```
> rest(97,18);
```

```
5
```

```
7
```

ZIFFERNDARSTELLUNG VON ZAHLEN

```
> restart;
```

```
> convert(2008,binary);
```

```
11111011000
```

```
> convert([2,2,1],base,3,5);
```

```
[2,3]
```

(Vorsicht, Reihenfolge beachten: [2,3] ist als 32 zu lesen!)

```
> convert(2008,base,3);
```

```
[1,0,1,2,0,2,2]
```

```
> convert([8,0,0,2],base,10,3);
```

```
[1,0,1,2,0,2,2]
```

```
> convert([1,0,1,2,0,2,2],base,3,10);
```

```
[8,0,0,2]
```

ERWEITERTER EUKLIDISCHER ALGORITHMUS

```
> restart;
```

```
> igcd(274,113);
```

```
1
```

```
> ilcm(2345,456);
```

```
1069320
```

```
> igcdex(274,113,a,b);
```

```
1
```

```
> a;b;
```

```
-40
```

```
97
```

```
> ilcm(3926,52);
```

```
7852
```

```
> isolve(274*x+113*y-1);
```

```
{x = 73 + 113 _Z1, y = -177 - 274 _Z1}
```

```
> isolve(35*x+33*y+22*z-100);
```

```
{y = _Z1 + 2 _Z2, x = 6 + 11 _Z1, z = -5 - 19 _Z1 - 3 _Z2}
```

PRIMZAHLEN

```
> isprime(2007);
```

```
false
```

```
> ifactor(2007);
```

```
(3)2 (223)
```

```
> isprime(2003);
```

```
true
```

```

[ > isprime(3498758903498769);
      false
[ > ifactor(34987589034987578394059092138766529034798275263910239471
      78098);
Warning, computation interrupted
[ > ifactor(12345678901234567890123456789012345678);
      (2) (3)2 (11) (165744768106288633) (376192348965210517)
[ > igcd(34987589034987578394059092138766529034798275263910239471780
      98,12345678901234567890123456789012345678);
      2
[
[ > ithprime(1);
      2
[ > ithprime(304);
      2003
[ > ithprime(305);
      2011
[ > for k from 1 to 100 do y[k]:=ithprime(k) od:
[ > print(seq(y[k],k=1..100));
2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97, 101,
  103, 107, 109, 113, 127, 131, 137, 139, 149, 151, 157, 163, 167, 173, 179, 181, 191, 193, 197,
  199, 211, 223, 227, 229, 233, 239, 241, 251, 257, 263, 269, 271, 277, 281, 283, 293, 307, 311,
  313, 317, 331, 337, 347, 349, 353, 359, 367, 373, 379, 383, 389, 397, 401, 409, 419, 421, 431,
  433, 439, 443, 449, 457, 461, 463, 467, 479, 487, 491, 499, 503, 509, 521, 523, 541
[ > ifactor(304958/943278588);
      (41) (3719)
      (2) (3)3 (7) (109) (11447)
[ >

```