```
> restart; with(numtheory);
```

```
[GIgcd, bigomega, cfrac, cfracpol, cyclotomic, divisors, factorEQ, factorset, fermat, imagunit,
  index, integral_basis, invcfrac, invphi, iscyclotomic, issqrfree, ithrational, jacobi, kronecker,
  λ, legendre, mcombine, mersenne, migcdex, minkowski, mipolys, mlog, mobius, mroot,
  msqrt, nearestp, nthconver, nthdenom, nthnumer, nthpow, order, pdexpand, ϕ, π, pprimroot,
  primroot, quadres, rootsunity, safeprime, σ, sq2factor, sum2sqr, τ, thue, φ]
```

(1)

```
> test :=proc(n)
  local a, i, L;
   L := [ ];
  i := 0;
  while i < n do
     i := i + 1;
    a := σ(3·i + 6) mod (i + 4) − i;
        if a = 0 and isprime(i + 2) = false then
           L := [op(L), i];
        end if;
  end do;
   return L;
  end proc;
```

```
test := proc(n)
  local a, i, L;
  L := [ ];
  i := 0;
  while i < n do
     i := i + 1;
     a := (numtheory:-sigma(3 * i + 6) mod i + 4) − i;
     if a = 0 and isprime(i + 2) = false then L := [op(L), i] end if
  end do;
  return L
end proc
```

(2)

```
> test(100000);
```

```
[7, 145, 600, 1038, 1108, 2718, 33024]
```

(3)

```
>
```