

```

> restart
> # This program searches for i-tuples of the j th kind
> i := 12 : j := 1 :
>
> primesm := proc(n :: integer)
  description "determine if n has a prime factor between 30 and 150";
  # it looks for small factors
  if igcd(230641901847837585965243013016220101141887350867, n) = 1 then
    return false
  else return true;
  end if;
end proc;
>
> primelg := proc(n :: integer)
  description "determine if n has a prime factgor between 150 and 1000";
  # it looks for LarGer factors

  if
    igcd(
      1312865055176910078564207882719538224448729816345205217739854693794377078\
      7843110263666706459839003586754490007774758863812174257838981916478584972\
      5581167880545081026093391307329357015523974477190930885579090333290794878\
      5453464034676653909094169533108635344554729990810222011651914307116984925\
      1467116517602749445551397359893185658671250182065813385604214207551, n) = 1
    then
  return false;
  else return true;
  end if ;
end proc;
>
> p := [0, 6, 10, 12, 16, 22, 24, 30, 34, 36, 40, 42]:
> # this is the pattern of the 12 tuple.
> #the mirror pattern is ignored for now.
> o := ImportData( )
                                o :=  $\left[ \begin{array}{l} 27489 \times 1 \text{ Matrix} \\ \text{Data Type: integer} \\ \text{Storage: rectangular} \\ \text{Order: Fortran\_order} \end{array} \right]$  (1)
> # o := ImportData("c:/Maplecode/mult10pat12a")
> #I just imported the above file
> o(2)
                                324397 (2)
> p[3]
                                10 (3)
> f := 27489;
                                f := 27489 (4)

```

```

> # f is the length of the o vector
> primorial := proc(n :: integer) :: integer,
  description "Return the product of the first n primes. Find n#"
  local a, b;
  b := 1;
  for a from 1 to n do
    b := b·ithprime(a);
  end do;
  b;
end proc:
> m := primorial(10)
                                     m := 6469693230
=
> #loopStart:=21539765965257747- (1539765965257747 mod m) : loopStop:=1018 :
> loopStart := 29970620979018720 - (29970620979018720 mod m) : loopStop := 1018 :
=
> # main loops
> for a from loopStart by m to loopStop do
  for b from 1 to f do
    counter := 1 :
    while counter > 0 and counter ≤ 12 do
      if primesm(a + o(b) + p[counter]) = false then counter := counter + 1;
      else counter := 0 :
      end if;
    end do;
    if counter = 13 then
      counter2 := 1 :
      while counter2 > 0 and counter2 < 13 do
        if primelg(a + o(b) + p[counter2]) = false then counter2 := counter2 + 1;
        else counter2 := 0 :
        end if ;
      end do;
      counter3 := 1 :
      if counter2 = 13 then
        while counter3 > 0 and counter3 < 13 do
          if isprime(a + o(b) + p[counter3]) = true then counter3 := counter3 + 1;
          else counter3 := 0 : end if;
        end do:
        if counter3 = 13 then printf("%20d", a + o(b));end if;
      end if;
    end if;
  end do;
end do;
Warning, computation interrupted
> a
                                     29970620979018720
=
>

```

(5)

(6)