```
> restart
> # This program searches for i-tuples of the j th kind
> i := 12 : j := 1 :
> loopStart := 1 : loopStop := 10^36 :
>
> prime1000 :=proc(n :: integer)
  description "determine if n has a factor between 11 and 1000"
  if igcd(230641901847837585965243013016220101141887350867, n) ≠ 1 then
  return false;
  elif
      igcd(
      131286505517691007856420788271953822444872981634520521773985469379437707 8\
      784311026366670645983900358675449000777475886381217425783898191647858497 2\
      558116788054508102609339130732935701552397447719093088557909033329079487 8\
      545346403467665390909416953310863534455472999081022201165191430711698492 5\
      146711651760274944555139735989318565867125018206581338560421420755 1, n)
       ≠ 1 then
  return false;
  else return true;
  end if;
  end proc
```

```
prime1000 := proc(n::integer)                                                (1)
  description "determine if n has a factor between 11 and 1000";
  if igcd(230641901847837585965243013016220101141887350867, n) <> 1 then
      return false
  elif
  igcd(
  131286505517691007856420788271953822444872981634520521773985469379437707 87\
  843110263666706459839003586754490007774758863812174257838981916478584972 55\
  811678805450810260933913073293570155239744771909308855790903332907948785 45\
  346403467665390909416953310863534455472999081022201165191430711698492514 67\
  116517602749445551397359893185658671250182065813385604214207551, n) <> 1
  then
      return false
  else
      return true
  end if
end proc
```

```
> prime1000(100001)
                                    true                                     (2)
> p := [0, 6, 10, 12, 16, 22, 24, 30, 34, 36, 40, 42]:
> p2 := [0, 2, 6, 8, 12, 18, 20, 26, 30, 32, 36, 42]:
>
> o := ImportData( )
```

$$o := \begin{bmatrix} 27489 \text{ x } 1 \text{ Matrix} \\ \text{Data Type: integer} \\ \text{Storage: rectangular} \\ \text{Order: Fortran\_order} \end{bmatrix} \quad (3)$$

```
> # o :=ImportData("c:/Maplecode/mult10pat12a")
```

```
> o
```

$$\begin{bmatrix} 27489 \text{ x } 1 \text{ Matrix} \\ \text{Data Type: integer} \\ \text{Storage: rectangular} \\ \text{Order: Fortran\_order} \end{bmatrix} \quad (4)$$

```
> f := 27489;
```

$$f := 27489 \quad (5)$$

```
> # f is the count of entires in 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)
```

$$m := 6469693230 \quad (6)$$

```
>
> loopstart := 2766324370669860 - (2766324370669860 mod m);
```

$$loopstart := 2766324370669860 \quad (7)$$

```
>
> for a from  loopstart by m to loopStop do
  for g from 1 to f do
  c := 1 :
   primesofar := true :
  while primesofar = true and c ≤ i do
  if prime1000(a + o(g) + p[c]) then c := c + 1 : else primesofar := false : end if:
  end do:
  if c = i + 1 then
    f := 1 :
    primesofar = true :
  while primesofar = true and f ≤ i do
  if isprime(a + o(g) + p[f]) then f := f + 1 : else primesofar := false : end if;
  end do:
  if f = i + 1 then  printf("%14d ", a + o(g)) : end if;
  end if;
  end do:
```

end do:

Warning, computation interrupted

```
> a
```

$$5638615846753890 \quad \textbf{(8)}$$

```
> g
```

$$3465 \quad \textbf{(9)}$$

```
> o
```

$$\begin{bmatrix} \textit{27489 x 1 Matrix} \\ \textit{Data Type: integer} \\ \textit{Storage: rectangular} \\ \textit{Order: Fortran\_order} \end{bmatrix} \quad \textbf{(10)}$$

```
> a + o(g) + p[c]
```

Error, invalid subscript selector

```
> o(1)
```

$$104947 \quad \textbf{(11)}$$

```
> p[3]
```

$$10 \quad \textbf{(12)}$$

```
> c
```

$$13 \quad \textbf{(13)}$$

```
>
```