```
(* Project Euler: Problem 88.  A Riemann1337 production. *)
Needs["Combinatorica`"]
Prod[lst_] := Product[lst[[i]], {i, 1, Length[lst]}]
```

In[2121]:=
```
flst = {};
kmx = 12 000;
nmx = 13 200; (* general take to be larger than k max, the bigger the better *)

For[n = 2, n ≤ nmx, n++,
  fcts = FactorInteger[n];
  cts = Flatten[
     Table[Table[fcts[[j, 1]], {i, 1, fcts[[j, 2]]}], {j, 1, Length[fcts]}]];
  sp = SetPartitions[cts];
  ov = Select[Table[Map[Prod, sp[[i]], 1], {i, 1, Length[sp]}], Length[#] > 1 &];
  cnds = Intersection[Map[Sort, ov]];
  tots = Tuples[Map[Total, cnds], {1}];
  numones = n - Flatten[tots];
  kvls = Table[numones[[j]] + Length[cnds[[j]]], {j, 1, Length[numones]}];
  knpr = Table[{kvls[[i]], n}, {i, 1, Length[kvls]}];
  flst = Append[flst, knpr];
  If[Mod[n, 200] == 0, Print[n]];
 ];
outprs = Sort[Flatten[flst, 1]];
kvls = Transpose[outprs][[1]];
srcvls = Intersection[kvls];
finprs = Flatten[Table[
    outprs[[Position[kvls, srcvls[[i]], 1, 1][[1]]]], {i, 1, Length[srcvls]}], 1];
finprs = Select[finprs, #[[1]] <= kmx &];
Total[Intersection[Transpose[finprs][[2]]]]
```

```
200

400

600

800

1000

1200

1400

1600

1800

2000

2200

2400

2600

2800

3000
```

3200

3400

3600

3800

4000

4200

4400

4600

4800

5000

5200

5400

5600

5800

6000

6200

6400

6600

6800

7000

7200

7400

7600

7800

8000

8200

8400

8600

8800

9000

9200

9400

9600

9800

10 000

10 200

10 400

10 600

10 800

11 000

11 200

11 400

11 600

11 800

12 000

12 200

12 400

12 600

12 800

13 000

13 200

Out[2130]= 7 587 457