harmony p 3.1 r d 2b prs, 10/6/62

bb=1600

```
3/      rrb
jx,     jmp

jr,     dap jx
        rpb-i

jj,     lac i l1
        sal 1s
        add i l1
        add ct1
        dac ct1
        spa i 40
        clf 4
        spa 40
        stf 4

        lac i l2
        sal 1s
        add i l2
        add ct2
        dac ct2
        spa i 50
        clf 5
        spa 50
        stf 5

        lac i l3
        sal 1s
        add i l3
        add ct3
        dac ct3
        spa i 60
        lat 6
        spa 60
        lat 16
        dac ttm
        sal 1s
        add ttm
        add tme
        dac tme

ddd,    lac i 1
        sad (dac ct1
        jmp cr1
        sad (dac ct2
        jmp cr2
        sad (dac ct3
        jmp cr3
        xct pni

dri,    lac 0
        lio 2
        jmp i 1
```

```
cr1,    lio ct1
        dio 0
        xct ddl
        xct ddl
        jmp dri

cr2,    lio ct2
        dio 0
        xct ddl
        jmp dri

cr3,    lio ct3
        dio 0
        jmp dri

pni,    xct (xct (xct (xct ddl
ddl,    opr

jq,     law ddl
        dap bh
        lio (m
        lac (jmp uu
        sas ui
        dio 1
        jmp jj

to,     iot 56
        iot 20
        law ui 1
        dap ui
        law bb
        dap inc
        law inp
        dap jx
        law tb+1
        dap l1
        dap l2
        dap l3
        cli 3
        esm

inp,    law nit
        dac 1
```

```
in,     jsp jr    /fa
        spi
        jmp jq
        dio inq
        dio sum
        xct ddl
        xct ddl
        xct pni
        jsp jr    /la
        lac inq
        dio inj
        sub inj
        dac inq
        lac inj
        add sum
        dac sum
        opr

ine,    jsp jr    /wd

inc,    dio
        lac i inc
        add sum
        dac sum
        idx inc
        sad (dio 7700
        jmp enh
        isp inq
        jmp ine
        jsp jr    /sum
        dio inj
        lac inj
        sub sum
        sza
        hlt
        opr

uin,    jmp in
```

```
enh,    law (rpb-i
        dap bh
        law bb
        dap inc

ui,     jmp
        law m
        dac 1
        law uu
        dap ui

uu,     isp inq
        jmp ehg
        law in
        jmp ehh

ehg,    law inc
ehh,    dap jx
        jmp jj

tme,    0
l1,     lac
        add ct1
        dac ct1
        spa i 40
        clf 4
        spa 40
        stf 4

l2,     lac
        add ct2
        dac ct2
        spa i 50
        clf 5
        spa 50
        stf 5

l3,     lac
        add ct3
        dac ct3
        spa i 60
        lat 6
        spa 60
        lat 16
        add tme
        sma
        skp 10
        jda tme   /usual loop, takes 32 cycles
```

```
j,      lac
        sma
        jmp sp
        dac tme
        idx j
        lac i j
        rcr 9s
        rcr 3s
        add (tb
        szf i 3
        jmp sik
        dap jpr

jpr,    lac
        sar 7s
        add i jpr
        dac tv1
        cla
        rcl 6s
        add (tb
        dap l2
        cla
        rcl 6s
        add (tb
        dap jps

jps,    lac
        sar 7s
        cma
        add i jps
        dac tv3
        szs i 30
        clf 3
        xct pni
        opr

ijk,    idx j
        sad (lac 7600

bh,     xct .
        sad (lac 7700
        jmp mq
```

```
adj,    lac i l1
        sal 1s
        add i l1
        add ct1
        dac ct1
        spa i 40
        clf 4
        spa 40
        stf 4

        lac i l2
        sal 1s
        add i l2
        add ct2
        dac ct2
        spa i 50
        clf 5
        spa 50
        stf 5

        lac i l3
        sal 1s
        add i l3
        add ct3
        dac ct3
        spa i 60
        lat 6
        spa 60
        lat 16
        jmp l1

sik,    szs 30
        jmp sfl

sij,    clf 3
        dap l1
        cla
        rcl 6s
        add (tb
        dap l2
        cla
        rcl 6s
        add (tb
        dap l3

        xct pni
        xct .-1
        xct .-1
        jmp ijk

sfl,    dap jpr
        law tv1
        dap l1
        law tv3
        dap l3
        stf 3
        jmp jpr
```

```
sp,         sza i
sp1,        jmp nch     /0: end
rrr,        lsm         /1: more
            rpb         /input
            jmp to

nch,        szs 20
            jmp rrr

n,          lac (jmp to
            dac 7751
            hlt cla cli-opr-opr+3

m,          law bb
            cli
            dap j
            jmp j

mq,         law bb
            dap j
            jmp l1

nit,        jmp .
ct1,        0
ct2,        0
ct3,        0
inq,        0
ttm,        0
inj,        0
tv1,        0
tv3,        0
sum,        0

tb,         000000      000000

            002551      002674      003023      003157      003321      003471
            003647      004034      004227      004432      004644      005067

            005323      005570      006046      006337      006643      007163
            007516      010067      010456      011064      011511      012156

            012646      013357      014114      014676      015506      016345
            017235      020157      021135      022150      023222      024335

            025513      026736      030230      031574      033214      034712
            036474      040336      042271      044317      046444      050672

            053226      055674      060461      063370      066430      071624
            075164      100674      104563      110637      115110      121564

            126454                  000052

constants               end,

start n
```