

" ttt1.s

t = 0

lac 017777

tad d1

dac 9f+t

lac 9f+t i

sad qdt

skp

jmp loop

dac dspflg

lav sbuf=1

dac blk1

dac blk2

jms dsboard

lav dbuf

sys capt

lav 16

sys sysloc

tad d1

dac lpadr

lav 13

sys sysloc

dac pbadr

dzm lpadr i

loop:

jms move

jms must; jmp loop

lac imaxin

dac maxin

lav stack=1

dac 10

jms try; jmp unwind

jms heur; jmp loop

unwind:

lac 12

dac 9f+t

1:

lac 9f+t i

jms mark; 1

=1

tad 9f+t

dac 9f+t

lac 9f+t i

spa

jmp done

jms mark; 512

=1

tad 9f+t

dac 9f+t

lac dspflg

sha

jmp 1b

jms getpb

sza

jmp .-2

jms getpb

sha

jmp .-2

jmp 1b

t = t+1

23

```
move: 0
  lac dspflg
  sza
  jmp dspmove
  jms messg; m>10>1v>1e>10
  dzm 9f+t
```

```
1:
  jms getc
  sad 012
  jmp 1f
  tad om60
  spa
  jmp move+1
  dac 9f+t+1
  and 03
  sad 9f+t+1
  skp
  jmp move+1
  lac 9f+t
  als 2
  xor 9f+t+1
  dac 9f+t
  jmp 1b
```

```
1:
  lac 9f+t
  spa
  jmp move+1
  and 077
  sad 9f+t
  skp
  jmp move+1
  tad boardp
  dac 9f+t
  lac 9f+t i
  sza
  jmp move+1
  lac 9f+t
  jms mark; 512
  jmp move i
```

```
dspmove:
  jms getpb
  sza
  jmp pbhit
  lac lpadr i
  sna
  jmp dspmove
```

```
lpbit:
  lmq
  lac blink
  sna
  jmp 1f
  cma
  tad boardp
  cma
  als 4
  tad sbufp
  dac 9f+t
  lac noblink
```

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```
dac blk1 i
dac blk2 i
dac 9f+t i
```

```
1:
dzm lpadr i
laeq
cma
tad sbufp
cma
lrss 4
dac 9f+t
and 077
sad 9f+t
skp
jmp dspmove
tad boardp
dac blink
lac 9f+t
alss 4
tad sbufp
dac 9f+t
lac blinkpar
dac 9f+t i
jmp dspmove
```

```
pbhit:
lac blink
sna
jmp dspmove
jms mark; 512
dzm blink
jmp move i
t = t+2
```

```
must: 0
```

```
" check for 3g,4g,4b
```

```
lav line=1
dac 8
-76
dac 9f+t
dzm 9f+t+1
dzm 9f+t+2
```

```
1:
cla
xct 8 i
xct 8 i
xct 8 i
xct 8 i
sad 04
jmp done
sad 04000
jmp done
sad 03
dac 9f+t+2
sad 03000
skp
jmp 2f
-4
tad 8
```

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```
dac 9
cla
xct 9 i
sza cla
jmp .+2
-1
tad 9
dac 9
lac 9 i
dac 9f+t+1
```

```
2:
isz 9f+t
jmp 1b
lac 9f+t+2
sza
jmp 1f
lac 9f+t+1
sna
jmp 1f
jms mark; 1
jmp must i
```

```
1:
isz must
jmp must i
t = t+3
```

```
done:
lac dspflg
sza
jmp 1f
jms messg; a>;x>;i>;t>;0
sys exit
```

```
1:
lav sbuf-1
dac blk1
dac blk2
jms dsboard
lav line=1
dac 8
-76
dac 9f+t
```

```
1:
cla
xct 8 i
xct 8 i
xct 8 i
xct 8 i
sad 04
jmp 1f
sad 04000
jmp 1f
isz 9f+t
jmp 1b
sys exit
```

```
1:
-4
tad 8
dac 9
1:
lac 9 i
cma
```



```
tad boardp
cma
alss 4
tad sbuff
dac 9f+t
lac blinkpar
dac 9f+t i
lac 8
sad 9
skp
jmp 1b
jms getpb
sza
jmp . = 2
jms getpb
sna
jmp . = 2
sys exit
t = t+1
```

```
mark: 0
dac 9f+t
lac mark i
dac 9f+t i
isz mark
lac dspflg
sna
jmp 1f
lac blk1
dac blk2
lac 9f+t
cma
tad boardp
cma
alss 4
tad sbuff
dac blk1
jms dsboard
jmp mark i
```

```
1:
lac 9f+t i
sad d1
skp
jmp mark i
lac 9f+t
cma
tad boardp
cma
dac 9f+t
lrs 4
and o3
tad o60
dac 0f
lac 9f+t
lrs 2
and o3
tad o60
dac 0f+1
lac 9f+t
and o3
tad o60
```

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```

dac 0f+2
jms messg; 0:0:0:0:0
jmp mark 1
t = t+1
try: 0
" check 3g or 3b
lav line-1
dac 9
-76
dac 9f+t+3
dzm 9f+t+4
1:
cla
xct 9 i
xct 9 i
xct 9 i
xct 9 i
sad o3000
dac 9f+t+4
sad o3
skp
jmp 2f
lac 10
dac 12
-1
dac 12 i
-4
tad 9
dac 9
cla
xct 9 i
sza cla
jmp .-2
-1
tad 9
dac 9
lac 9 i
dac 12 i
lac dspflg
sza
jmp try 1
jms messg; i>;040;w>;i>in>;0
jmp try 1
2:
isz 9f+t+3
jmp 1b
lac 9f+t+4
sna
jmp 1f
isz try
jmp try 1
" save
1:
isz maxin
jmp 1f
-1

```

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```
dac maxin
isz try
jmp try i
```

```
1:
lac try
dac 10 i
lac 8
dac 10 i
lac 9f+t
dac 10 i
lac 9f+t+1
dac 10 i
lac 9f+t+2
dac 10 i
```

```
" check 2e
```

```
lav line=1
dac 8
=76
dac 9f+t
```

```
1:
cla
xct 8 i
xct 8 i
xct 8 i
xct 8 i
sad o2
skp
jmp 2f
=4
tad 8
dac 9
cla
xct 9 i
sza cla
jmp .=2
lac 9
dac 9f+t+1
lac 9f+t+1 i
dac 9f+t+1
cla
xct 9 i
sza cla
jmp .=2
lac 9
dac 9f+t+2
lac 9f+t+2 i
dac 9f+t+2
```

```
" recurse
```

```
lac d1
dac 9f+t+1 i
lac o1000
dac 9f+t+2 i
jms try; jmp prnt
lac d1
dac 9f+t+2 i
lac o1000
dac 9f+t+1 i
```

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jms try/ jmp prnt

dzm 9f+t+1 i

dzm 9f+t+2 i

2:

isz 9f+t

jmp 1b

" restore

=5

tad 10

dac 10

dac 9

lac 9 i

dac try

lac 9 i

dac 8

lac 9 i

dac 9f+t

lac 9 i

dac 9f+t+1

lac 9 i

dac 9f+t+2

isz try

jmp try i

prnt:

lac 9f+t+1 i

sad d1

jmp 1f

lac 9f+t+1

dac 12 i

lac 9f+t+2

jmp 2f

1:

lac 9f+t+2

dac 12 i

lac 9f+t+1

2:

dac 12 i

dzm 9f+t+1 i

dzm 9f+t+2 i

=5

tad 10

dac 10

dac 9

lac 9 i

dac try

lac 9 i

dac 8

lac 9 i

dac 9f+t

lac 9 i

dac 9f+t+1

lac 9 i

dac 9f+t+2

jmp try i

t = t+5

heur: 0

jms addpri

23

=2
tad force
dac lforce
=1000
dac lpri
=64
dac 9f+t
lac boardp
dac 9f+t+1

1:
lac 9f+t+1 i
sza
jmp 3f
lac d1
dac 9f+t+1 i
jms addpri
lac force
sad lforce
jmp 4f
lac pri
cma
tad lpri
sma cma
jmp 3f-1
sza
jmp 2f
isz prob
=1
cll; idiv; prob;..
lacq
lrss 6
dac force
sys time
lacq
tad rand
cll; mul; 37111
lacq
dac rand
cll; lrs 6
cma
tad force
spa
jmp 3f-1
jmp 2f+2

2:
lac d1
dac prob
lac pri
dac lpri
lac 9f+t+1
dac lmov
dzm 9f+t+1 i

3:
isz 9f+t+1
isz 9f+t
jmp 1b
lac lmov
jms mark; 1
jmp heur i

4:
lac 9f+t+1

23

```

jms mark; 1
jmp heur 1
t = t*2

addpri: 0
clq
lav line=1
dac 8
-76
dac 9f+t
dzm force

1:
cla
xct 8 i
xct 8 i
xct 8 i
xct 8 i
sad 02000
isz force
dac 9f+t+1
rtr/rtr/rtr/rar
xor 9f+t+1
and 077
taf 2f
dac ,+2
lacq
taf ,
lmg
isz 9f+t
jmp 1b
lav plane=1
dac 8
-18
dac 9f+t

1:
-16
dac 9f+t+1
cla

0:
xct 8 i
isz 9f+t+1
jmp 0b

pstrat:
jms 3f; 04002; 1
jms 3f; 03001; 15
jms 3f; 04001; 20
jms 3f; 1; 1
isz 9f+t
jmp 1b
lacq
dac pri
jmp addpri i

2: taf pritab

3: 0
sad 3b i
jmp 1f
isz 3b
isz 3b
jmp 3b i

1:
isz 3b

```

23


```
lacq
tad 3b i
lmq
cla
isz 3b
jmp 3b i
t = t+2
```

```
dsboard: 0
=6h
dac 9f+t
dzm 9f+t+2
lav board=1
dac 8
lav sbuf=1
dac 11
```

```
8:
lac noblink
dac 11 i
lac 9f+t+2
and 03
alss 6
dac 9f+t+3
alss 1
tad 9f+t+3
dac 9f+t+3
lac 9f+t+2
and 01h
alss 4
tad 9f+t+3
xor setxy
dac 11 i
lac 9f+t+2
and 07h
alss 4
xor setyy
dac 11 i
lac 8 i
sna
jmp 4f
sad d1
jmp 3f
lav ex=1
jmp 2f
```

```
3: lav oh=1
jmp 2f
```

```
4: lav dot=1
2: dac 9
```

```
=12
dac 9f+t+1
```

```
1:
lac 9 i
dac 11 i
isz 9f+t+1
jmp 1b
lac noblink
dac 11 i
isz 9f+t+2
isz 9f+t
jmp 8b
```

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```
=1  
dac 11 i  
lac blinkpar  
dac blk1 i  
dac blk2 i  
jmp dsboard i  
t = t+4
```

```
getc: 0  
cla  
sys read; 9f+t; 1  
sna spa  
sys save  
lac 9f+t  
lrss 9  
jmp getc i
```

```
messg: 0  
=1  
tad messg  
dac 9  
1:  
lac 9 i  
sna  
jmp 1f  
dac 9f+t  
lac d1  
sys write; 9f+t; 1  
jmp 1b
```

```
1:  
lac d1  
sys write; 012; 1  
jmp 9 i  
t = t+1
```

```
getpb: 0  
sys time  
lac pbadr i  
and 02000  
sza  
sys exit  
lac pbadr i  
jmp getpb i
```


" ttt2
boardp: board
shufp: sbuf
qdt: <dt>
imaxin: =4000
noblink: 060000
blinkpar: 070000
setxv: setx
setyv: sety
o12: 012
o14: 014
o74: 074
o3: 03
o2000: 02000
o60: 060
o4: 4
o3000: 03000
o4000: 04000
o2: 2
o1000: 01000
d1: 1
om60: =060
o77: 077
line:

tb = tad board=1
tb+52; tb+56; tb+60; tb+64 ✓
tb+1; tb+6; tb+11; tb+16 ✓
tb+2; tb+6; tb+10; tb+14
tb+2; tb+18; tb+34; tb+50
tb+2; tb+22; tb+42; tb+62
tb+3; tb+7; tb+11; tb+15 ✓
tb+3; tb+23; tb+43; tb+63
tb+3; tb+19; tb+35; tb+51
tb+4; tb+7; tb+10; tb+13
tb+4; tb+8; tb+12; tb+16
tb+4; tb+19; tb+34; tb+49
tb+4; tb+20; tb+36; tb+52
tb+4; tb+23; tb+42; tb+61
tb+61; tb+62; tb+63; tb+64 ✓
tb+4; tb+24; tb+44; tb+64
tb+5; tb+6; tb+7; tb+8 ✓
tb+5; tb+21; tb+37; tb+53
tb+5; tb+22; tb+39; tb+56
tb+6; tb+22; tb+38; tb+54
tb+7; tb+23; tb+39; tb+55
tb+8; tb+23; tb+38; tb+53
tb+8; tb+24; tb+40; tb+56
tb+9; tb+10; tb+11; tb+12
tb+9; tb+26; tb+43; tb+60
tb+9; tb+25; tb+41; tb+57
tb+12; tb+28; tb+44; tb+60 ✓
tb+13; tb+14; tb+15; tb+16
tb+13; tb+25; tb+37; tb+49
tb+13; tb+26; tb+39; tb+52
tb+13; tb+29; tb+45; tb+61
tb+13; tb+30; tb+47; tb+64
tb+14; tb+26; tb+38; tb+50
tb+14; tb+30; tb+46; tb+62
tb+15; tb+27; tb+39; tb+51
tb+53; tb+54; tb+55; tb+56
tb+15; tb+31; tb+47; tb+63

16-

22

tb+16; tb+28; tb+40; tb+52
 tb+16; tb+27; tb+38; tb+49
 tb+16; tb+31; tb+46; tb+61
 tb+16; tb+32; tb+48; tb+64
 tb+17; tb+21; tb+25; tb+29
 tb+17; tb+18; tb+19; tb+20
 tb+17; tb+22; tb+27; tb+32
 tb+18; tb+22; tb+26; tb+30
 tb+19; tb+23; tb+27; tb+31
 tb+20; tb+23; tb+26; tb+29
 tb+20; tb+24; tb+28; tb+32
 tb+21; tb+22; tb+23; tb+24
 tb+25; tb+26; tb+27; tb+28
 tb+29; tb+30; tb+31; tb+32
 tb+33; tb+34; tb+35; tb+36
 tb+33; tb+38; tb+43; tb+48
 tb+33; tb+37; tb+41; tb+45
 tb+34; tb+38; tb+42; tb+46
 tb+35; tb+39; tb+43; tb+47
 tb+36; tb+39; tb+42; tb+45
 tb+36; tb+40; tb+44; tb+48
 tb+37; tb+38; tb+39; tb+40
 tb+41; tb+42; tb+43; tb+44
 tb+45; tb+46; tb+47; tb+48
 tb+49; tb+50; tb+51; tb+52
 tb+49; tb+53; tb+57; tb+61
 tb+12; tb+27; tb+42; tb+57
 tb+49; tb+54; tb+59; tb+64
 tb+50; tb+54; tb+58; tb+62
 tb+51; tb+55; tb+59; tb+63
 tb+52; tb+55; tb+58; tb+61
 tb+57; tb+58; tb+59; tb+60
 tb+11; tb+27; tb+43; tb+59
 tb+10; tb+26; tb+42; tb+58
 tb+1; tb+2; tb+3; tb+4 ✓
 tb+1; tb+5; tb+9; tb+13 ✓
 tb+1; tb+17; tb+33; tb+49 ✓
 tb+1; tb+18; tb+35; tb+52 ✓
 tb+1; tb+21; tb+41; tb+61 ✓
 tb+1; tb+22; tb+43; tb+64 ✓

planet

tb+1; tb+2; tb+3; tb+4; tb+5; tb+6; tb+7; tb+8
 tb+9; tb+10; tb+11; tb+12; tb+13; tb+14; tb+15; tb+16
 tb+17; tb+18; tb+19; tb+20; tb+21; tb+22; tb+23; tb+24
 tb+25; tb+26; tb+27; tb+28; tb+29; tb+30; tb+31; tb+32
 tb+33; tb+34; tb+35; tb+36; tb+37; tb+38; tb+39; tb+40
 tb+41; tb+42; tb+43; tb+44; tb+45; tb+46; tb+47; tb+48
 tb+49; tb+50; tb+51; tb+52; tb+53; tb+54; tb+55; tb+56
 tb+57; tb+58; tb+59; tb+60; tb+61; tb+62; tb+63; tb+64
 tb+13; tb+14; tb+15; tb+16; tb+29; tb+30; tb+31; tb+32
 tb+45; tb+46; tb+47; tb+48; tb+61; tb+62; tb+63; tb+64
 tb+9; tb+10; tb+11; tb+12; tb+25; tb+26; tb+27; tb+28
 tb+41; tb+42; tb+43; tb+44; tb+57; tb+58; tb+59; tb+60
 tb+5; tb+6; tb+7; tb+8; tb+21; tb+22; tb+23; tb+24
 tb+37; tb+38; tb+39; tb+40; tb+53; tb+54; tb+55; tb+56

23

tb+1; tb+2; tb+3; tb+4; tb+17; tb+18; tb+19; tb+20
tb+33; tb+34; tb+35; tb+36; tb+49; tb+50; tb+51; tb+52

tb+1; tb+5; tb+9; tb+13; tb+17; tb+21; tb+25; tb+29
tb+33; tb+37; tb+41; tb+45; tb+49; tb+53; tb+57; tb+61

tb+2; tb+6; tb+10; tb+14; tb+18; tb+22; tb+26; tb+30
tb+34; tb+38; tb+42; tb+46; tb+50; tb+54; tb+58; tb+62

tb+3; tb+7; tb+11; tb+15; tb+19; tb+23; tb+27; tb+31
tb+35; tb+39; tb+43; tb+47; tb+51; tb+55; tb+59; tb+63

tb+4; tb+8; tb+12; tb+16; tb+20; tb+24; tb+28; tb+32
tb+36; tb+40; tb+44; tb+48; tb+52; tb+56; tb+60; tb+64

tb+1; tb+6; tb+11; tb+16; tb+17; tb+22; tb+27; tb+32
tb+33; tb+38; tb+43; tb+48; tb+49; tb+54; tb+59; tb+64

tb+4; tb+7; tb+10; tb+13; tb+20; tb+23; tb+26; tb+29
tb+35; tb+39; tb+42; tb+45; tb+52; tb+55; tb+58; tb+62

tb+1; tb+2; tb+3; tb+4; tb+21; tb+22; tb+23; tb+24
tb+41; tb+42; tb+43; tb+44; tb+61; tb+62; tb+63; tb+64

tb+13; tb+14; tb+15; tb+16; tb+25; tb+26; tb+27; tb+28
tb+37; tb+38; tb+39; tb+40; tb+39; tb+50; tb+51; tb+52

tb+1; tb+5; tb+9; tb+13; tb+18; tb+22; tb+26; tb+30
tb+35; tb+39; tb+43; tb+47; tb+52; tb+56; tb+60; tb+64

tb+4; tb+8; tb+12; tb+16; tb+19; tb+23; tb+27; tb+31
tb+34; tb+38; tb+42; tb+46; tb+49; tb+53; tb+57; tb+61

pr:tabi
0;10;22;0
0;10;20;0
0;30;30;0
0;0;0;0;0

ex:
vx 0100
vy 020 iv
vx 0200
vy 040 v
vx m 0140
vy 0 iv
vx 0100
vy m 040 v
dnep
dnep
dnep
dnep

oh:
vx 0100
vy 020 iv
vx 0140
vy 0 v
vx 040
vy 040 v
vx m 0140
vy 0 v

61

49

23

vx m 040
vy m 040 v
dnep
dnep

dot:

lpenb
vx 0200
vy 040 iv
vx 05
vy 0 v
vx 0
vy m 05 v
vx m 05
vy 0 v
vx 0
vy 05 v
lpdis

dbuf:

lpdis
scale 0
setx 0
sety 0
"

vx 01400 v
vx 0377
vy 0374 v
vx m 01377 v
vx m 0400
vy m 0374 v
"

setx 0
sety 0400
vx 01400 v
vx 0377
vy 0374 v
vx m 01377 v
vx m 0400
vy m 0374 v
"

setx 0
sety 01000
vx 01400 v
vx 0377
vy 0374 v
vx m 01377 v
vx m 0400
vy m 0374 v
"

setx 0
sety 01400
vx 01400 v
vx 0377
vy 0374 v
vx m 01377 v
vx m 0400
vy m 0374 v
dnep

sbuf: ., +1050
board: ., +64
maxin: ., +1
force: ., +1

23


```
pri: ,=,+1  
lpri: ,=,+1  
lforce: ,=,+1  
rand: ,=,+1  
lmovi ,=,+1  
dspflg: ,=,+1  
lpadr: ,=,+1  
pbadr: ,=,+1  
blink: ,=,+1  
blk1: ,=,+1  
blk2: ,=,+1  
9: ,=,+t  
stack:
```

```
dnoP = 040040  
setx = 0140000  
sety = 0164000  
m = 02000  
scale = 0040040  
y = 020000  
iv = 030000  
vx = 0100000  
vy = 0104000  
lpdis = 0044000  
lpenb = 0046000  
vbl = 0704424
```


" un

```
sys open; n,out; 0
spa
jmp error
sys read; buf; 3072
cli; idiv; 6
lacq; ema; tad d1
dac c1
```

```
1:
lac t1
tad d4
dac t2
lac i t2
sad d3
skp
jmp 2f
lac d1
sys write; t1; buf; 4
lac d1
sys write; mes+1; 1
```

```
2:
lac t1
tad d6
dac t1
isz c1
jmp 1b
```

```
sys exit
```

```
error:
lac d1
sys write; mes; 2
sys exit
```

```
mes:
077; 012
```

```
n,out:
<n.>;<ou>;<t 040;040040
```

```
d1: 1
d6: 6
d3: 3
c1: 0
t2: 0
d4: 4
```

```
buf:
```