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_PROGSTART 0
_CONSTANTS $300
_VARIABLES $400
_STACK $1000

!outcharsize 1000
.outcharloc $F000
.outcharidx 0

.inchararray[] "10\n33\n10\n1000\n104389573485768345104389573485768345\n";
.incharsize 400
.incharidx 0

!memarraysize 1000
.memarray $D000
.idx 0 ; or given offset

start:
    JSR fncleararray
    JSR fnbrainfuck
    HLT

fnbrainfuck:
    INCV idx
    JSR fninput
    POP
    STA (memarray), idx
idbf100start:
    LDA (memarray), idx
    BZE idbf100end
idbf101start:
    LDA (memarray), idx
    BZE idbf101end
    LDA (memarray), idx
    SUB #10
    STA (memarray), idx
idbf102start:
    LDA (memarray), idx
    BZE idbf102end
    ADDV idx, #3
idbf103start:
    LDA (memarray), idx
    BZE idbf103end
    ADDV idx, #4
    JMP idbf103start
idbf103end:
    LDA (memarray), idx
    INC
    STA (memarray), idx
idbf104start:
    LDA (memarray), idx

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BZE idbf104end
idbf105start:
    LDA (memarray), idx
    BZE idbf105end
    LDA (memarray), idx
    DEC
    STA (memarray), idx
    JMP idbf105start
idbf105end:
LDA (memarray), idx
INC
STA (memarray), idx
DECV idx
idbf106start:
    LDA (memarray), idx
    BZE idbf106end
    LDA (memarray), idx
    DEC
    STA (memarray), idx
    ADDV idx, #4
    LDA (memarray), idx
    ADD #2
    STA (memarray), idx
    ADDV idx, #4
    LDA (memarray), idx
    INC
    STA (memarray), idx
idbf107start:
    LDA (memarray), idx
    BZE idbf107end
    ADDV idx, #4
    JMP idbf107start
idbf107end:
LDA (memarray), idx
ADD #2
STA (memarray), idx
idbf108start:
    LDA (memarray), idx
    BZE idbf108end
    LDA (memarray), idx
    DEC
    STA (memarray), idx
    INCV idx
    LDA (memarray), idx
    INC
    STA (memarray), idx
    SUBV idx, #5
    JMP idbf108start
idbf108end:
    JMP idbf106start
idbf106end:

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        SUBV idx, #3
        JMP idbf104start
idbf104end:
LDA (memarray), idx
ADD #6
STA (memarray), idx
idbf109start:
    LDA (memarray), idx
    BZE idbf109end
    INCV idx
    LDA (memarray), idx
    SUB #6
    STA (memarray), idx
    DECV idx
    LDA (memarray), idx
    DEC
    STA (memarray), idx
    JMP idbf109start
idbf109end:
INCV idx
LDA (memarray), idx
SUB #2
STA (memarray), idx
idbf110start:
    LDA (memarray), idx
    BZE idbf110end
    ADDV idx, #2
idbf111start:
    LDA (memarray), idx
    BZE idbf111end
    LDA (memarray), idx
    DEC
    STA (memarray), idx
    ADDV idx, #4
    JMP idbf111start
idbf111end:
LDA (memarray), idx
INC
STA (memarray), idx
INCV idx
LDA (memarray), idx
INC
STA (memarray), idx
idbf112start:
    LDA (memarray), idx
    BZE idbf112end
    SUBV idx, #4
    JMP idbf112start
idbf112end:
INCV idx
LDA (memarray), idx

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        DEC
        STA (memarray), idx
        JMP idbf110start
idbf110end:
        JSR fninput
        POP
        STA (memarray), idx
        DECV idx
        JMP idbf102start
idbf102end:
        INCV idx
        JMP idbf101start
idbf101end:
        ADDV idx, #3
        LDA (memarray), idx
        ADD #2
        STA (memarray), idx
        INCV idx
        LDA (memarray), idx
        INC
        STA (memarray), idx
        ADDV idx, #2
idbf113start:
        LDA (memarray), idx
        BZE idbf113end
        SUBV idx, #2
idbf114start:
        LDA (memarray), idx
        BZE idbf114end
        ADDV idx, #4
idbf115start:
        LDA (memarray), idx
        BZE idbf115end
        LDA (memarray), idx
        DEC
        STA (memarray), idx
        JMP idbf115start
idbf115end:
        LDA (memarray), idx
        ADD #9
        STA (memarray), idx
        DECV idx
idbf116start:
        LDA (memarray), idx
        BZE idbf116end
        INCV idx
        LDA (memarray), idx
        DEC
        STA (memarray), idx
        DECV idx
        LDA (memarray), idx

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        DEC
        STA (memarray), idx
        JMP idbf116start
idbf116end:
LDA (memarray), idx
ADD #9
STA (memarray), idx
INCV idx
idbf117start:
    LDA (memarray), idx
    BZE idbf117end
    LDA (memarray), idx
    DEC
    STA (memarray), idx
idbf118start:
    LDA (memarray), idx
    BZE idbf118end
    DECV idx
    LDA (memarray), idx
    DEC
    STA (memarray), idx
    INCV idx
    LDA (memarray), idx
    DEC
    STA (memarray), idx
    JMP idbf118start
idbf118end:
LDA (memarray), idx
INC
STA (memarray), idx
idbf119start:
    LDA (memarray), idx
    BZE idbf119end
    SUBV idx, #4
    JMP idbf119start
idbf119end:
    JMP idbf117start
idbf117end:
DECV idx
idbf120start:
    LDA (memarray), idx
    BZE idbf120end
    INCV idx
    LDA (memarray), idx
    INC
    STA (memarray), idx
    DECV idx
    LDA (memarray), idx
    DEC
    STA (memarray), idx
    JMP idbf120start

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        idbf120end:
        INCV idx
        JMP idbf114start
idbf114end:
INCV idx
idbf121start:
    LDA (memarray), idx
    BZE idbf121end
    INCV idx
    idbf122start:
        LDA (memarray), idx
        BZE idbf122end
        ADDV idx, #4
        JMP idbf122start
    idbf122end:
    LDA (memarray), idx
    INC
    STA (memarray), idx
    idbf123start:
        LDA (memarray), idx
        BZE idbf123end
        idbf124start:
            LDA (memarray), idx
            BZE idbf124end
            LDA (memarray), idx
            DEC
            STA (memarray), idx
            JMP idbf124start
        idbf124end:
        DECV idx
        idbf125start:
            LDA (memarray), idx
            BZE idbf125end
            LDA (memarray), idx
            INC
            STA (memarray), idx
            idbf126start:
                LDA (memarray), idx
                BZE idbf126end
                LDA (memarray), idx
                DEC
                STA (memarray), idx
                ADDV idx, #4
                JMP idbf126start
            idbf126end:
            INCV idx
            LDA (memarray), idx
            INC
            STA (memarray), idx
            DECV idx
            JMP idbf125start

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idbf125end:
INCV idx
idbf127start:
    LDA (memarray), idx
    BZE idbf127end
    DECV idx
    LDA (memarray), idx
    INC
    STA (memarray), idx
    INCV idx
    idbf128start:
        LDA (memarray), idx
        BZE idbf128end
        SUBV idx, #4
        JMP idbf128start
    idbf128end:
        JMP idbf127start
idbf127end:
    LDA (memarray), idx
    INC
    STA (memarray), idx
    SUBV idx, #4
    JMP idbf123start
idbf123end:
ADDDV idx, #3
idbf129start:
    LDA (memarray), idx
    BZE idbf129end
    LDA (memarray), idx
    DEC
    STA (memarray), idx
    ADDV idx, #4
    JMP idbf129start
idbf129end:
    LDA (memarray), idx
    INC
    STA (memarray), idx
    INCV idx
    LDA (memarray), idx
    INC
    STA (memarray), idx
    idbf130start:
        LDA (memarray), idx
        BZE idbf130end
        SUBV idx, #4
        JMP idbf130start
    idbf130end:
        JMP idbf121start
idbf121end:
INCV idx
idbf131start:

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LDA (memarray), idx
BZE idbf131end
idbf132start:
    LDA (memarray), idx
    BZE idbf132end
    INCV idx
    LDA (memarray), idx
    INC
    STA (memarray), idx
    ADDV idx, #2
    idbf133start:
        LDA (memarray), idx
        BZE idbf133end
        SUBV idx, #4
        LDA (memarray), idx
        INC
        STA (memarray), idx
        ADDV idx, #4
        LDA (memarray), idx
        DEC
        STA (memarray), idx
        JMP idbf133start
    idbf133end:
        INCV idx
        JMP idbf132start
idbf132end:
SUBV idx, #4
idbf134start:
    LDA (memarray), idx
    BZE idbf134end
    LDA (memarray), idx
    DEC
    STA (memarray), idx
    JMP idbf134start
idbf134end:
INCV idx
idbf135start:
    LDA (memarray), idx
    BZE idbf135end
    LDA (memarray), idx
    DEC
    STA (memarray), idx
    SUBV idx, #4
    JMP idbf135start
idbf135end:
JMP idbf131start
idbf131end:
ADDV idx, #7
JMP idbf113start
idbf113end:
ADDV idx, #2

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LDA (memarray), idx
INC
STA (memarray), idx
idbf136start:
    LDA (memarray), idx
    BZE idbf136end
    idbf137start:
        LDA (memarray), idx
        BZE idbf137end
        LDA (memarray), idx
        DEC
        STA (memarray), idx
        JMP idbf137start
    idbf137end:
        LDA (memarray), idx
        ADD #6
        STA (memarray), idx
        ADDV idx, #4
        JMP idbf136start
idbf136end:
SUBV idx, #4
idbf138start:
    LDA (memarray), idx
    BZE idbf138end
    idbf139start:
        LDA (memarray), idx
        BZE idbf139end
        DECV idx
        LDA (memarray), idx
        ADD #8
        STA (memarray), idx
        INCV idx
        LDA (memarray), idx
        DEC
        STA (memarray), idx
        JMP idbf139start
    idbf139end:
        DECV idx
        LDA (memarray), idx
        PUS
        JSR fnoutput
    idbf140start:
        LDA (memarray), idx
        BZE idbf140end
        LDA (memarray), idx
        DEC
        STA (memarray), idx
        JMP idbf140start
    idbf140end:
        DECV idx
idbf141start:

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        LDA (memarray), idx
        BZE idbf141end
        LDA (memarray), idx
        DEC
        STA (memarray), idx
        JMP idbf141start
idbf141end:
DECV idx
idbf142start:
        LDA (memarray), idx
        BZE idbf142end
        LDA (memarray), idx
        DEC
        STA (memarray), idx
        JMP idbf142start
idbf142end:
DECV idx
        JMP idbf138start
idbf138end:
DECV idx
JSR fninput
POP
STA (memarray), idx
JMP idbf100start
idbf100end:
RTS

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fnoutput:
    POP
    STA (outcharloc), outcharidx
    INCV outcharidx
    RTS

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fninput:
    LDA inchararray, incharidx
    INCV incharidx
    PUS
    RTS

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fncleararray:
    LDA #0
    LDX memarraysize
fncleararraystart:
    DEX
    STA (memarray), X
    BZEV X, fncleararrayend
    JMP fncleararraystart
fncleararrayend:
    RTS

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