```
TITLE Exe sinus
.486
STCK    SEGMENT PARA STACK 'stack' use16
        DB              64 DUP ('my_stack')
STCK    ENDS


DATA1   SEGMENT PARA PUBLIC 'DATA' use16

; data definitions

ANGLE   DW      60
TEMP    DW      ?
CONST1  DD      180.0
SINE    DQ      ?


DATA1   ENDS

COD1    SEGMENT PARA PUBLIC 'CODE' use16

MAIN    PROC    FAR

ASSUME  CS:COD1,DS:DATA1,SS:STCK

        PUSH    DS              ; INIT RETURN TO DOS
        XOR     AX,AX
        PUSH    AX
        MOV     AX,DATA1        ;INIT DATA SEGMENT REGISTER
        MOV     DS,AX
        MOV     AX,ANGLE
        CMP     AX,45
        JG      FIXIT
        JMP     CONT
FIXIT:
        NEG     AX
        ADD     AX,90
CONT:
        MOV     TEMP,AX

        FINIT                   ; soft reset for fpu
        FLDPI                   ; load PI=3.14159265358979323846264338327795
        FLD     CONST1          ; 180 degree
        FDIV                    ;
        FILD    TEMP            ;
        FMUL                    ; radians
        FPTAN                   ; compute partial tangent
        FWAIT

        MOV     AX,ANGLE        ; if > 45 then cosinus
        CMP     AX,45
        JG      COSIN
```

```
        JMP     SININ           ; else sinus

COSIN:

        FXCH    ST(1)           ; st(0) <-> st(1)
SININ:
        FMUL    ST(0),ST        ; st(0)^2
        FXCH    ST(1)
        FLD     ST(0)           ;
        FMUL    ST(0),ST        ; old st(1)^2
        FADD    ST(0),ST(2)     ; add the two
        FSQRT
        FDIVP   ST(1),ST        ; st(0) now sin of angle
        FSTP    SINE            ; store
        FWAIT

        RET

MAIN    ENDP

COD1    ENDS
                END     MAIN
```