Experiment 7

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.MODEL SMALL
.STACK 100H
.DATA
    NUM1 DW 36       ; First number
    NUM2 DW 24       ; Second number
    GCD_RESULT DW ?   ; Store GCD result
    LCM_RESULT DW ?   ; Store LCM result
    MSG_GCD DB 'GCD: $'
    MSG_LCM DB ' LCM: $'
    NEWLINE DB 0DH, 0AH, '$'  ; New line for output formatting

.CODE
MAIN PROC
    MOV AX, @DATA
    MOV DS, AX

    MOV AX, NUM1
    MOV BX, NUM2
    CALL GCD         ; Compute GCD
    MOV GCD_RESULT, AX

    MOV AX, NUM1
    MUL BX           ; AX = NUM1 * NUM2
```

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    DIV GCD_RESULT   ; AX = LCM (Product / GCD)
    MOV LCM_RESULT, AX

    MOV DX, OFFSET MSG_GCD
    MOV AH, 09H
    INT 21H         ; Print "GCD: "

    MOV AX, GCD_RESULT
    CALL PRINT_NUM   ; Print GCD

    MOV DX, OFFSET NEWLINE
    MOV AH, 09H
    INT 21H         ; Print new line

    MOV DX, OFFSET MSG_LCM
    MOV AH, 09H
    INT 21H         ; Print " LCM: "

    MOV AX, LCM_RESULT
    CALL PRINT_NUM   ; Print LCM

    MOV AH, 4CH
    INT 21H         ; Exit program
MAIN ENDP

; GCD Procedure (Euclidean Algorithm)
GCD PROC
    CMP BX, 0
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    JE END_GCD
GCD_LOOP:
    MOV DX, 0
    DIV BX          ; AX = AX / BX, Remainder in DX
    MOV AX, BX
    MOV BX, DX
    CMP BX, 0
    JNE GCD_LOOP
END_GCD:
    RET
GCD ENDP

; Print Number Procedure
PRINT_NUM PROC
    MOV CX, 0
NEXT_DIGIT:
    MOV DX, 0
    MOV BX, 10
    DIV BX          ; AX / 10 → Quotient in AX, Remainder in DX
    PUSH DX
    INC CX
    TEST AX, AX
    JNZ NEXT_DIGIT

PRINT_LOOP:
    POP DX
    ADD DL, '0'
    MOV AH, 02H
```

```
    INT 21H

    LOOP PRINT_LOOP


    RET

PRINT_NUM ENDP


END MAIN
```

OUTPUT: