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; Exercise 3 - Multiplication & Division
; Purpose: Multiply and divide registers; preserve quotient and remainder.
; #belleswhoshell.ca

section .data
mul_res dq 0
div_q dd 0
div_r dd 0

section .text
global _start

_start:
    ; Multiplication (signed) - using imul
    mov rax, 7
    imul rax, 6        ; rax = 7 * 6 = 42
    mov [mul_res], rax ; store 64-bit result

    ; Division (unsigned) - 20 / 3
    mov eax, 20        ; dividend in eax (lower 32 bits)
    xor edx, edx       ; clear edx for unsigned div (high dword)
    mov ebx, 3         ; divisor
    div ebx            ; eax = quotient, edx = remainder
    mov [div_q], eax
    mov [div_r], edx

    ; exit
    mov eax, 60
    xor edi, edi
    syscall
```