

Pauta Auxiliar 7

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Problema 1

```
int mystery(int c){
    unsigned int t;
    t = c - 'A';
    if (t <= 'Z' - 'A')
        c += 'a' - 'A';
    return c;
}
```

Problema 2

```
factorial:                ; On entry, N is stored in R0.
    MOVS    r1, r0        ; Copy N to R1 and test.
    MOVEQ   r0, #1        ; if (R1 == 0) Set result to 1 and return
loop
    SUBNES  r1, r1, #1    ; if (R1 != 0) Decrement R1 and test.
    MULNE   r0, r1, r0    ; if (R1 != 0) Result = R1 * Result.
    BNE     loop          ; if (R1 != 0) Loop.
    MOV     pc, r14       ; Return with result in R0.
END
```

Problema 3

```
.globl foo
.equ datum_size,4
foo:
    stmfd sp!, {r4, r5, r6, r7, lr}    ; save registers on the stack
    cmp     r1, #0                    ; exit if no elements
    ble     last
    mov     r4, r0                    ; copy the parameters to
                                        ; locals
    mov     r5, r1
    mov     r6, r2
    mov     r7, r3
    ldr     r1, [r4], #datum_size      ; load first vector element
                                        ; to r0 and bump pointer
    mov     r0, r6                    ; address of first string to
                                        ; r0
    bl      printf                    ; and print itt
    subs    r5, r5, #1                ; decrement counter
    beq     last                      ; and fall out if zero
foo_loop:
```

```

        ldr    r1, [r4], #datum_size      ; load next vector item to r0
and bump pointer
        mov    r0, r7                    ; address of subsequent string to
r0
        bl     printf                    ; and print it
        subs   r5, r5, #1                ; decrement counter
        bne    foo_loop                  ; and loop if non-zero
last:
        ldmfd  sp!, {r4, r5, r6, r7, pc} ; restore registers from
                                           ; stack and return

```

Test:

```

.equ datum_size,4
.globl main
.section .rodata
first:
    .asciz "Vector of words - values : %d"
subsequent:
    .asciz ", %d"
final:
    .asciz "\n"
values:
    .word 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60
endvalues:
.text
main:
    ldr    r0, =values
    mov    r1, #11
    ldr    r2, =first
    ldr    r3, =subsequent
    bl     _vprintf
    ldr    r0, =final
    bl     printf

```

Problema 4

```

void updater(struct node *nod, int (*operation)(int, int), int father){
    if (nod->left!=0) updater(nod->left, operation, nod->value);
    nod->value =operation(nod->value,father);
    if (nod->right!=0) updater(nod->right, operation, nod->value);
}

```