PROBLEMA 1.12

a) $\frac{1}{MTTF} = \frac{1}{MTTF_1} + \dots + \frac{1}{MTTF_n}$

$$\frac{1}{125\cdot10^3} + \frac{1}{10^6} + \frac{1}{2\cdot10^5} + \frac{4}{10^6} + \frac{1}{5\cdot10^5} + \frac{8}{10^5} = \frac{1}{10^5}$$

MTTF = 10000 horas

b) MTBF = MTTF + MTTR MTBF = 10000 + 20 = 10020 horas

c) $Availability = \frac{MTTF}{MTTF + MTTR}$

$Availability = \frac{100000}{100200} = 0'998$

PROBLEMA 2.1

x & y = 0b0000000010 = 0x02

x && y = 0b0000000001 = 0x01

x | y = 0b1111101111 = 0xF7

x || y = 0b0000000001 = 0x01

~x | ~y = 0b1111111101 = 0xFD

!x || !y = 0b0000000000 = 0x00

x & !y = 0b0000000000 = 0x00

x && ~y = 0b0000000001 = 0x01

PROBLEMA 2.2

0xF0 = 0b11110000 $\xrightarrow{<<4}$ 0x00 = 0b0000000000 $\xrightarrow{>>3L}$ 0x1E = 0b0001111 0

$\xrightarrow{>>3A}$ 0b1111110 = 0xFE

0x0F = 0b0000 1111 $\xrightarrow{<<4}$ 0b1111 0000 = 0xF0 $\xrightarrow{>>3L}$ 0b0000000001 = 0x01

$\xrightarrow{>>3A}$ 0b0000000001 = 0x01

0xCC = 0x11001100 $\xrightarrow{<<4}$ 0b11000000 = 0xC0 $\xrightarrow{>>3L}$ 0b0001100 1 = 0x19

$\xrightarrow{>>3A}$ 0b1111 1001 = 0xF9

0x55 = 0b0101 0101 $\xrightarrow{<<4}$ 0b0101 0000 = 0x50 $\xrightarrow{>>3L}$ 0b = 0000 0010 = 0x0A

$\xrightarrow{>>3A}$ 0x0A = 0b0000 1010

0x80 = 0b1000 0000 $\xrightarrow{<<4}$ 0b0000 0000 = 0x00 $\xrightarrow{>>3L}$ 0b 0001 0000 = 0x10

$\xrightarrow{>>3A}$ 0b1111 0000 = 0xF0

0x02 = 0b0000 0010 $\xrightarrow{<<4}$ 0b 0010 0000 = 0x20 $\xrightarrow{>>3L}$ 0b 0000 0000 = 0x00

$\xrightarrow{>>3A}$ 0x00 = 0b 0000 0000

PROBLEMA 2.5

```
        movl $0, %eax   # i
        movl A, %ebx
        movl tabla, %ecx
for:    cmpl $256, %eax
        jge fi_for
        movsbl (%ebx, %eax), %edx
        movb (%ecx, %edx), %dl
        movb %dl, (%ebx, %eax)
        incl %eax
        jmp for
fi_for:
```

PROBLEMA 2.6

```
sorpresa: pushl %ebp
        movl %esp, %ebp
        movl 8(%ebp), %ecx #i
        movl 12(%ebp), %edx #@x
        cmpl $-10, %ecx
        jle else
        cmpl $10, %ecx
        jge else
        movl %ecx, (%edx)
        jmp fi_if
else:   leal 8(%ebp), %ecx #@i
        movl %ecx, 12(%ebp)

fi_if:  movl 12(%ebp), %eax
        popl %ebp
        ret
```