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Laboratório 3

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INF1018 - 3WA

2024.2

1.

a. y = x & 0xFF;
b. z = x | 0xFF000000;

2.

```c
int odd_ones(unsigned int x) {
  int count = 0, y;

  while(x!=0){
    if (x & 1 == 1) count++;
    x = x >> 1;
  }
  if (count & 1 == 1) return 1;
  else return 0;
}
```

3.

a.

```c
#include <stdio.h>

unsigned char switch_byte(unsigned char x);

int main (void){
  unsigned char x = 0xCF;
  x = switch_byte(x);
  printf("%x\n", x);
  return 0;
}

unsigned char switch_byte(unsigned char x){
  int a = x << 4;
  int b = x >> 4;
  x = a|b;
  return x;
}
```

b.

```c
#include <stdio.h>

unsigned char rotate_left(unsigned char x, int n);

int main (void){
  unsigned char x = 0x61;
  printf("%x rotate left de 1 bit -> %x\n", x, rotate_left(x, 1));
  printf("%x rotate left de 2 bits -> %x\n", x, rotate_left(x, 2));
  printf("%x rotate left de 7 bits -> %x\n", x, rotate_left(x, 7));
  return 0;
}

unsigned char rotate_left(unsigned char x, int n){
  int a = x << n;
  int b = x >> (8-n);
  return a|b;
}
```