Part 1.

1.

```
int convertToBool(int x) {
return !!x;
}
```

```
2. int subtract(int x, int y){
   int negY = ~y + 1;
   return x + negY;
   }
3. int killKthBit(int n, int k){
   int mask = 1 << (k);
   return n & ~mask;
   }
```

Part 2.

4.

$0x110 0x110 (%rax, %rdx) 0xCC

%rax 0x104 3(%rax, %rbx) 0x19

0x110 0x42 256(, %rdx, 2) 0xCC

(%rax) 0x34 (%rax, %rdx, 2) 0x19

8(%rax)0x19 229(%rcx, %rbx, 8) 0x42

5.

%rdx = 0x1000

%r12 = 0x12345

0x1008 = 0x12345

%rax = 0x12345

%rbx = 0x10080

6. (%rax + % rcx) * 4

```
movq %rcx, %rdx
addq %rax, %rdx
multq $4, %rdx
```

7.

a) %eax is 32bit and %rdx is 64bit, so we can't mov %eax to %rdx directly, as the sizes dont' match

b) %di represents the lower 16 bits of %rdi, so movb doesn't work, as it can only move bytes

c) you can't call mov from memory to memory

d) %eax is a 32bit register, so mov to (%eax) is not possible as a 32 bit memory adderess is not valid in a 64 bit system