CSCI 2330 – x86-64 MOV Exercises

1. For each of the following x86-64 instructions, identify each operand type (first and second) as **Register**, **Immediate** (immediate data), or **Memory**. For example, **`movq %rax, %rbx`** would be **Register, Register**.

a. **`movq %rax, (%rcx)`**
b. **`movq $10, %rcx`**
c. **`movq %rcx, %rax`**
d. **`movq 0x102, %rbx`**
e. **`movq (%rax), %rcx`**
f. **`movq $0x50, 50`**

2. Suppose that registers **`%rax`** and **`%rbx`** both contain the value **`160`** and the instruction **`movq $25, (%rax)`** is executed. Give the resulting value of each of the following operands.

a. **`%rax`**
b. **`(%rax)`**
c. **`%rbx`**
d. **`(%rbx)`**

3. What value is in **`%rax`** at each checkpoint indicated in the instruction sequence below?

```
movq $5, %rdx
movq $8, %rax
movq %rdx, %rax
```

a. **# checkpoint a**

```
movq %rax, 0x104
movq $0x104, %rdx
```

b. **# checkpoint b**

```
movq $42, 0x104
movq (%rdx), %rax
```

c. **# checkpoint c**