

CSCI 2330 – x86-64 MOV Exercises

1. For each of the following x86-64 instructions identify the each operand as **Immediate**, **Register**, or **Memory**.

Operation	1 st operand	2 nd operand
<code>movq %rax, %rcx</code>		
<code>movq \$10, %rcx</code>		
<code>movq %rax, (%rcx)</code>		
<code>movq 0x102, %rbx</code>		
<code>movq (%rax), %rcx</code>		
<code>movq \$0x50, 50</code>		

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?

```
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