

- [CPSC 275: Introduction to Computer Systems](#)

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Fall 2025

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# Solution to Homework 14

1. `movb $0xF, (%bl)` Cannot use `%bl` as address register
  - `movl %ax, (%esp)` Mismatch between instruction suffix and register ID
  - `movw (%eax), 4(%esp)` Cannot have both source and destination be memory references
  - `movb %ah, %sh` No register named `%sh`
  - `movl %eax, $0x123` Cannot have immediate as destination
  - `movl %eax, %dx` Destination operand incorrect size
  - `movb %si, 8(%ebp)` Mismatch between instruction suffix and register ID

2. `movl %eax, (%esp)`
  - `movw (%eax), %dx`
  - `movb $0xFF, %bl`
  - `movb (%esp, %edx, 4), %dh`
  - `pushl $0xFF`
  - `movw %dx, (%eax)`
  - `popl %edi`

- | Operand                      | Value              |
|------------------------------|--------------------|
| <code>%eax</code>            | <code>0x100</code> |
| <code>0x104</code>           | <code>0xAB</code>  |
| <code>\$0x108</code>         | <code>0x108</code> |
| <code>(%eax)</code>          | <code>0xFF</code>  |
| <code>4(%eax)</code>         | <code>0xAB</code>  |
| <code>9(%eax, %edx)</code>   | <code>0x11</code>  |
| <code>260(%ecx, %edx)</code> | <code>0x13</code>  |
| <code>0xFC(, %ecx, 4)</code> | <code>0xFF</code>  |
| <code>(%eax, %edx, 4)</code> | <code>0x11</code>  |

4. `void decode1(int *xp, int *yp, int *zp) {`
  - `int tx = *xp;`
  - `int ty = *yp;`
  - `int tz = *zp;`
  - 
  - `*yp = tx;`
  - `*zp = ty;`
  - `*xp = tz;`
  - `}`

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