- CPSC 275: Introduction to Computer Systems

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Fall 2025

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Solution to Homework 3

1. A. `0x18`
   B. `0x30`
   C. `0xF0`

2. A. `0x30`
   B. `0x19`
   C. `0x19`

3. A. `x & 1`. The least significant bit (LSB) determines even (`0`) / odd (`1`).
   B. `(x >> 31) & 1`
   C. `(x >> (n-1)) & 1`
   D. To set `x = x | (1 << (n-1));` To clear `x = x & ~(1 << (n-1));` To toggle `x = x ^ (1 << (n-1));`
   E.
```
int count = 0;
int temp = x;
while (temp) {
    count += temp & 1;  // count if LSB is set
    temp >>= 1;         // move to the next bit
}
```

- **Welcome: Sean**
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