PreLab Q1

1.
$$\begin{array}{r} 0x0004 \\ +\,0x0006 \\ \hline 0x000A \end{array}$$

2.
$$\begin{array}{r} 0x0034 \\ +\,0x0056 \\ \hline 0x008A \end{array}$$

3.
$$\begin{array}{r} 0x2001 \\ +\,0x35FA \\ \hline 0x55FB \end{array}$$

4.
$$\begin{array}{r} 0x3401 \\ +\,0x25EE \\ \hline 0x59EF \end{array}$$

Q2

1.
$$\begin{array}{r} 0100 \\ +\,0110 \\ \hline 1010 \end{array}$$

2.
$$\begin{array}{r} 110100 \\ +\,10101 10 \\ \hline 10001010 \end{array}$$
(carry 1)

3.
$$\begin{array}{r} 1000000000000 1 \\ +\,1101011111110 1 0 \\ \hline 10101011111101 1 \end{array}$$
(carry 1)

4.
$$\begin{array}{r} 11010 000000001 \\ +\,10010 111101 110 \\ \hline 101100111101 111 \end{array}$$

Q3

1. 4 + 6 = 10

2. 52 + 86 = 138

3. 8193 + 13818 = 22011

4. 13313 + 9710 = 23023

Q4.

```
uint32_t bit_merge (uint16_t first, uint16_t second)
    { uint32_t first_ = first;
      uint32_t second_ = second;
      uint32_t result;
      second_ = second << 16;
      result = second | first;
      return result;
    }

int main (..) {
    ...
}
```

Q5

Section A:

-15536 50000

Section B

-15536 -15536

→ 16 bit will only compute to 32767

Q6

Section A: 2

Section B: 0

Q7

i = 0

k = 25

l = 31

j = 6