*김재희*

*컴퓨터공학부 | 201601692*

*3번째 과제*

연습 문제 2.86 2.88 2.91

**2.86**

|  |  |  |
| --- | --- | --- |
|  | Extended precision | |
| Description | Value | Decimal |
| Smallest positive denormalized | 1/2^(63+16384-2)  = 1/2^16445 | 3.645199\*(1/10^4951) |
| Smallest positive normalized | 1/2^(16384+2)  = 1/2^16382 | 3.362103\*(1/10^4932) |
| Largest normalized | (1-1/2^64)\*2^16384  = 2^16384-2^16320 | 1.189731\*10^4932 |

**2.88**

|  |  |  |  |
| --- | --- | --- | --- |
| Format A | | Format B | |
| Bits | Value | Bits | Value |
| 1 01111 001 | -9/8 | 1 0111 0010 | -9/8 |
| 0 10110 011 | 176 | 0 1110 0110 | 176 |
| 1 00111 010 | -(1/2^8)\*(5/4)  = -5/2^10 | 1 0000 0101 | -(1/2^6)\*(5/16)  = -5/2^10 |
| 0 00000 111 | (1/2^14)\*(7/8)  = 7/2^17 | 0 0000 0001 | (1/2^6)\*(1/16)  = 1/2^10 |
| 1 11100 000 | -(2^13)\*(1)  = -2^13 | 1 1110 1111 | -(2^7)\*(31/16)  = -248 |
| 0 10111 100 | (2^8)\*(3/2)  = 384 | 0 1111 0000 | ∞ |

**2.91**

**A**

0 10000000 10010010000111111011011 이므로 비율 이진수는 다음과 같다.

11.0010010000111111011011(2)

**B**

3 + 1/7

= 11.001001001001…(001)(2)

**C**

223/71 => 11.0010010000…(2)

22/7 => 11.0010010010…(2)

9 번째 비트에서 두 근사값이 멀어진다.