

Practice questions (Ch. 3)**A. For each of the following decimal numbers, convert it to 2's complement 11 bit representation**

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|---------|--------------------|
| 1. -80 | [Ans: 11110110000] |
| 2. -100 | [Ans: 11110011100] |
| 3. 100 | [Ans: 00001100100] |

B. Convert the following real numbers from base 10 to unsigned binary:

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| 1. 22.625 | [Ans: 10110.101] |
| 2. 55.25 | [Ans: 110111.01] |
| 3. 0.125 | [Ans: 0.001] |

C. Perform the following unsigned binary numbers addition and subtraction:

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|--------------------------|------------------|
| 1. 00101.001 + 11110.101 | [Ans: 00011.110] |
| 2. 11101.01 – 10101.11 | [Ans: 00111.10] |
| 3. 11101.101 – 10101.111 | [Ans: 00111.110] |

D. Convert the following 2's complement binary numbers into decimal numbers:

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|--------------|-------------|
| 1. 11001111 | [Ans: -49] |
| 2. 100111001 | [Ans: -199] |
| 3. 1111000 | [Ans: -8] |
| 4. 100000 | [Ans: -32] |

E. Perform the following 2's complement binary addition and subtraction:

- | | |
|------------------|--------------|
| 1. 10101 – 00011 | [Ans: 10010] |
| 2. 11010 + 00111 | [Ans: 00001] |
| 3. 00101 – 11000 | [Ans: 01101] |
| 4. 00111 – 01100 | [Ans: 11011] |