

HW1.3. Number Representation (Randomized)

Translate the following values between the given number formats, if possible. For binary and hexadecimal answers, include the appropriate prefix (0b for binary, 0x for hex).

All binary and hexadecimal values are **8-bit values**.

*Tip: When you are converting to a different number representation, take note of the **range** of allowable values that can be represented in 8 bits. That is, what is the **smallest and largest number** that can be written given the desired number representation?*

If the value cannot be written in the required format, submit "**N/A**"

n: 0 1 2 3 4 5 6 7 8

2N/A 2 4 8 16 32 64 128 256

16^n: 1 16 256 4096

Q1.1: Translate 216 from decimal to unsigned hexadecimal

unsigned hexadecimal value: 0xD8



Q1.2: Translate 0x52 from 2's complement hexadecimal to decimal

decimal value: 0d82

0101 0010

2^1+2^4+2^6=2+16+64=



Q1.3: Translate 156 from decimal to 2's complement binary

2's complement binary value: N/A



Q1.4: Translate -81 from decimal to unsigned binary

unsigned binary value: N/A



Q1.5: Translate 17 from decimal to unsigned binary

unsigned binary value: 0b10001



0b00010001

Q1.6: Translate -73 from decimal to 2's complement binary

2's complement binary value: 0b0110111



0b10110111

Q1.7: Translate 0b10001000 from 2's complement binary to decimal

decimal value: -0d119

-0d120

1110111 ->

0 1 2 4 5 6 ->

1+2+4+16+32+64

Q1.8: Translate 81 from decimal to unsigned binary

unsigned binary value: 0b1010001



0b01010001

Save & Grade 20 attempts left

Save only

Additional attempts available with new variants ?

Homework 1

Assessment overview

Total points: 100/100

Score: 100%

Question

Value: 20

History: 20

Awarded points: 20/20

Report an error in this question

Previous question

Next question

Attached files

No attached files

Attach a file

Attach text

nega: 1111000->
2^6+2^5+2^4+2^3=120