CSS 422: Hardware and Computer Organization

Exercise Set 1: Number Bases

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# Base X to Y Conversions

In this section, we will practice converting from a base X to base Y. During the conversion, it is helpful to convert the number from base X to base 10 first. Then convert the new result back to base Y

## 102810 to base 16

Answer: 40416

## ABCDEF1216 to base 2 (hint: Don’t try to convert them to base 10)

Answer: 10101011110011011110111100010010

## 36588 to base 11

Answer: 20311

## 0100 0100 0010 1111 1010 10112 to base 16 (hint: Don’t try to convert to base 10)

Answer: 442FAB16

## 203985611 to base 22 (Be careful with this one, easy to get error)

Answer: F822H22

# Power of 2

This section practice your abilities to memorize and recognize power of 2. Within the near future of this class, you will rely on your memory to do this. So it is better to start practicing now

Do not use a calculator. Choose between these units in result: KB, MB,GB,TB,B

## 215

Answer: 32KB

## 2^28

Answer: 256 MB

## 2^34

Answer: 16GB

## 2^7

Answer: 128 B

## 2^49

Answer: 512 TB

## 2^21

Answer: 2 MB

## 2^44

Answer: 16 TB

## 2^3 \* 2^12

Answer: 8 Bytes \* 4 KB = 32 KB