

# Exercises

The following two questions relate to dials that have 10 different states, as discussed in the previous slide.

- ▶ Given a machine that uses 4 dials, how many different numbers can we represent?

10000

- ▶ If we want to represent 256 different values, how many dials do we need?

3 dials

# Exercises

- ▶ How many different values can we represent with a byte?

256

- ▶ If we want to represent 30 different values, how many bits would we need?

5 bits

# Exercises

- ▶ What is the decimal equivalent of 101111?

47

- ▶ What is the binary equivalent of 123?

1111011

# Exercises

- ▶ Which has more bytes, 1KB or 1KiB?

1KB = 1000 bytes while 1KiB = 1024 bytes

- ▶ How many bytes are in 128MB?

$128 \times 10^6 = 128,000,000$  bytes

# Exercises

Which of the following sequences is arranged in descending order of memory capacity (i.e. from the largest memory capacity to the smallest)?

- a) 1 MB, 1 GB, 1 GiB, 1 TB, 1 TiB
- b) 1 GB, 1 GiB, 1 TB, 1 TiB, 1 MB
- c) 1 TB, 1 TiB, 1 GB, 1 GiB, 1 MB
- d) 1 TiB, 1 TB, 1 GiB, 1 GB, 1 MB
- e) 1 MB, 1 GiB, 1 GB, 1 TiB, 1 TB