

## Information homework practical exercise 1.2:

Information for floating point type with 4 bytes:

Its machine precision is  $1.1920928955078125 \times 10^{-7}$  which is roughly  $1.2 \times 10^{-7}$ .

Its largest representable number is  $3.4028234663852886 \times 10^{38}$  which is roughly  $3.4 \times 10^{38}$ .

Its smallest positive (nonzero) representable number is  $1.1754943508222875 \times 10^{-38}$  which is roughly  $1.2 \times 10^{-38}$ .

The type has 23 bits in the mantissa.

The type has 8 bits in the exponent.

Information for floating point type with 8 bytes:

Its machine precision is  $2.220446049250313 \times 10^{-16}$  which is roughly  $2.2 \times 10^{-16}$ .

Its largest representable number is  $1.7976931348623157 \times 10^{308}$  which is roughly  $1.8 \times 10^{308}$ .

Its smallest positive (nonzero) representable number is  $2.2250738585072014 \times 10^{-308}$  which is roughly  $2.2 \times 10^{-308}$ .

The type has 52 bits in the mantissa.

The type has 11 bits in the exponent.