Unit 1. Exercises about representation of information

1. Convert from decimal to binary:
    a. 234
    b. 555
    c. 12321
    d. 152
    e. 32768

2. Convert from hexadecimal to binary:
    a. 45A0
    b. CF
    c. AAB2
    d. 3020

3. Convert from binary to hexadecimal:
    a. 110001000
    b. 100010110

4. Complete the following conversions related to octal numeral system:
    a. Convert the numbers from exercise 3 to octal.
    b. Convert the octal 3020 to binary.

5. Fill in the gaps, using all the conversions you need. You have to write the steps to transform each number.

BINARY	DECIMAL	HEXADECIMAL	OCTAL
	33		
		FF	
			377
10 0001			

6. How many bits do you need to represent the following numbers in binary?
    a. hexadecimal: 4B, 4AA, FF4FA, 345F
    b. decimal: 100, 256, 255, 32, 31, 3, 4350, 1024, 45, 2^{30}, 63

7. Solve the following parts using ASCII extended (8 bits).
    a. Write a random text, which contains letters, numbers and other alphanumeric characters.
    b. Encode to hexadecimal, according ASCII table.
    c. Convert to binary.