1. Which of these lists correctly counts from 1 to 5 in binary?

A

000100010001, 001000100010, 010101010101, 010001000100, 001100110011

B

000100010001, 001000100010, 010001000100, 001100110011, 010101010101

C

000100010001, 001000100010, 001100110011, 010001000100, 010101010101

D

000100010001, 001000100010, 010001000100, 010101010101, 001100110011

E

000100010001, 001000100010, 001100110011, 010101010101, 01000100

2.Your programmer friend told you that they just turned 11110  years old, in binary.

**How old are they in decimal?**

3.It's your friend's birthday, and you want to use binary numbers for the candles on their cake. Your plan is to use green candles to mean "on" and gray candles to mean "off".

**What's the least number of candles you need in order to represent the age 18?**

**4.**You've decided to use binary to communicate "secret" messages to your friend, and you want to tell them to meet you at locker 44.

**What would that decimal number be in binary?**

5.In 'C', an unsigned integer is usually 16 bits. What is the largest number that can be represented by an unsigned integer?

6.Convert binary numbers to decimal numbers

a) 010001012=\_\_\_\_\_\_\_\_\_\_\_\_\_10

b) 011100002=\_\_\_\_\_\_\_\_\_\_\_\_\_10

c) 010101012=\_\_\_\_\_\_\_\_\_\_\_\_\_10

d) 01010102=\_\_\_\_\_\_\_\_\_\_\_\_\_10

e) 01111012=\_\_\_\_\_\_\_\_\_\_\_\_\_10

f) 0101100112=\_\_\_\_\_\_\_\_\_\_\_\_\_10

7.Convert decimal numbers to binary numbers

a) 3710=\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2

b) 8510=\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2

c) 1310=\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2

d) 15410=\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2

e) 8110=\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2

f) 12410=\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2