digital circuits session number one 2023

task number one

- consider the following set {a,b,c,d,e,f,g,h}
- how many bits might get needed to represent the elements of the said set using a binary system?

task number two

- consider the following set {0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15}
- how many bits might get needed to represent the elements of the said set using a binary system?

task number three

- consider the following set {0,1,2 and so on up to 511}
- how many digits might get needed to represent the elements of the said set using a trinary system?

task number four

- consider the following set {-4,-3,-2,-1,0,1,2,3,4}
- how many digits might get needed to represent the elements of the said set using a trinary system?

task number five

- consider the following set {0,1,2 and so on up to 255}
- assume that the elements of the said set have been represented using an eight bits binary system
- try to do the following
  - determine the binary pattern which might get used to represent 13
  - determine the binary pattern which might get used to represent 17
  - determine the binary pattern which might get used to represent 113

task number six

- consider the following binary patterns 0011, 1001, 1100 and 1110
- try to determine the decimal numbers which might get represented by the said patterns