Hamming CRC and Subnetting Tutorial

1. **If one has a 6 bit data packet how many hamming bits are required**

2. **If one has a 16 bit data packet how many hamming bits are required**

3. **Consider the following data packet 1011010;**
   insert the required hamming bits for transmission and determine their values, using odd parity

4. **Write out the ASCII "E" using even parity to generate the hamming bits**

5. **Repeat question 4 but with odd parity**

6. **Considering the following data packet which includes hamming bits with even parity, determine the position where the error exists 10001010111**

7. **What is the digital representation of the following polynomial standard divisors:**
   a. $x^{16} + x^{15} + x^2 + 1$
   b. $x^{16} + x^{12} + x^5 + 1$

8. **Carry out mod 2 division dividing 11011000 by 10101**

9. **If our polynomial divisor is 10101, what would the CRC be if the original data component was 10111**

10. **With the polynomial divisor 10101, the following input was received 111010001. Has the transmission occurred without error?**

11. **For the class C IP Address 195.164.123.0 Subnet the address to have 12 subnets, giving their host IP addresses, along with final mask**