Problem 1: https://cryptopals.com/sets/1/challenges/1

**Input Format**Single hex string  
**Output Format**Single base64 string  
**Sample Input 0**49276d206b696c6c696e6720796f757220627261696e206c696b65206120706f69736f6e6f7573206d757368726f6f6d  
**Sample Output 0**SSdtIGtpbGxpbmcgeW91ciBicmFpbiBsaWtlIGEgcG9pc29ub3VzIG11c2hyb29t

Problem 2: https://cryptopals.com/sets/1/challenges/2 **Input Format**Two hex strings on separate lines  
**Output Format**Single hex string  
**Sample Input 0**1c0111001f010100061a024b53535009181c  
686974207468652062756c6c277320657965  
**Sample Output 0**746865206b696420646f6e277420706c6179

Problem 3: https://cryptopals.com/sets/1/challenges/3 **Input Format**Single hex string.  
**Output Format**Decoded English string.  
**Sample Input 0**1b37373331363f78151b7f2b783431333d78397828372d363c78373e783a393b3736  
**Sample Output 0**Cooking MC's like a pound of bacon

Problem 4: https://cryptopals.com/sets/1/challenges/4

**Input Format**First line contains *N* - number of lines to be checked.   
Next *N* lines contain hex strings - possible one-byte encryptions.  
**Output Format**Decrypted English string  
**Sample Input**327  
0e3647e8592d35514a081243582536ed3de6734059001e3f535ce6271032  
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**Sample Output 0**Now that the party is jumping

Problem 5: https://cryptopals.com/sets/1/challenges/5 **Input Format**First line contains **key**, second line contains **plaintext  
Output Format**Ciphertext in hex  
**Sample Input 0**ICE  
Burning 'em, if you ain't quick and nimble, I go crazy when I hear a cymbal  
**Sample Output 0**0b3637272a2b2e63622c2e69692a23693a2a3c6324202d623d63343c2a26226324272765272a282b2f2065630c69242a69203728393c69342d2c2d6500632d2c22376922652a3a282b2229

Problem 6:https://cryptopals.com/sets/1/challenges/6 **Input Format**Single hex string  
**Output Format**Single string in English  
**Sample Input 0**  
  
**Sample Output 0**Off-line storage is a computer data storage on a medium or a device that is not under the control of a processing unit. The medium is recorded, usually in a secondary or tertiary storage device, and then physically removed or disconnected. It must be inserted or connected by a human operator before a computer can access it again. Unlike tertiary storage, it cannot be accessed without human interaction. Off-line storage is used to transfer information, since the detached medium can be easily physically transported. Additionally, in case a disaster, for example a fire, destroys the original data, a medium in a remote location will probably be unaffected, enabling disaster recovery. Off-line storage increases general information security, since it is physically inaccessible from a computer, and data confidentiality or integrity cannot be affected by computer-based attack techniques. Also, if the information stored for archival purposes is rarely accessed, off-line storage is less expensive than tertiary storage. In modern personal computers, most secondary and tertiary storage media are also used for off-line storage. Optical discs and flash memory devices are most popular, and to much lesser extent removable hard disk drives. In enterprise uses, magnetic tape is predominant. Older examples are floppy disks, Zip disks, or punched cards. Non-volatile memory retains the stored information even if not constantly supplied with electric power. It is suitable for long-term storage of information. Volatile memory requires constant power to maintain the stored information. The fastest memory technologies are volatile ones, although that is not a universal rule.