Problem # 1
(a) Use the Caesar cipher to encipher

ATTACK IS IMMINENT

(b) Decipher the following cryptogram, assuming it has been enciphered by a Caesar cipher.

SURFHHGWRURPH

Problem # 2
(a) Encipher this message by using a shift cipher with $k = 7$:

MISSION IMPOSSIBLE

(b) Decipher the following cryptogram, assuming it was enciphered by a shift cipher with $k = 10$.

WSCCSYXMYWZVODON

Problem # 3
(a) Encipher this message by using a Vigenère cipher with the key word THUNDER:

SILENCE IS GOLDEN

(b) Decipher the following cipher message by using a Vigenère cipher with the key word HOPE:

LHTVUOAPPTT.

Problem # 4
When the PT-109 American patrol boat, under the command of Lieutenant John F. Kennedy, was sunk by a Japanese destroyer, a message was received at an Australian wireless station in Playfair code:

KXJEY UREBE ZWEHE WRYTU HEYFS
KREHE GOYFI WTTTU OLKSY CAJPO
BOTEI ZONTX BYBNT GONEY CUZWR
GDSON SXBOU YWRHE BAAHY USEDQ

The key was *royal new zealand navy*. Decrypt the message. Translate TT into tt.