1.)

2.)

a.)

the .data stores the RAM that has a size of 0x4e and the .text stores the code in flash that has a size of 0x228c

b.)

I went through brute force looking at all 24 permutations of the four functions and found that 3241 was the correct order.

c.)

I found my initial B at location 0x40000800

I found my initial R at location 0x4000080A

d.)

With pin 5 low, the time in milliseconds for the function is 748 milliseconds

With pin 5 high, the timer in milliseconds for the function is 245 milliseconds

I figured this out with attaching a pulldown resistor and a button attached to pin 5, timing it with millis() function and taking the output to the serial port. Other ways you can do this is to time it with the timer counters if you need a more precise value over a long period of time.

3.)

a.)

Message: Congratulations! You decrypted the CSCE236 hidden message and achieved required functionality

b.)

Message: The message key length is 16 bits. It only contains letters, periods, and spaces

c.)

Fast. Neat. Average. Friendly. Good. Good KEY: 73 BE