Lab #3

1. Write a program to implement the Miller-Rabin primality test. Test it with various values of 'n'.
2. Calculate φ(n) (Euler's Totient Function) for a given positive integer 'n.' Verify its correctness for multiple values of 'n.'
3. Write a program to apply Fermat's Little Theorem to check if a given number, is a probable prime.
4. Write a program to generate a public and private key using RSA algorithm. Also, encrypt a message “CAB College” and again decrypt it using the algorithm.
5. Write a program to calculate the Key for two persons using the Diffie Hellman Key exchange algorithm.