

NAME:

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Problem 1: In the table below you have two columns, each with a choice for p, q , the prime-number parameters in the RSA. For each column, determine the public and secret keys, and compute the encryption of $M = 5$.

Note: In both cases, you *must* use the smallest correct value of the public exponent e .

p and q	$p = 5, q = 19$	$p = 3, q = 23$
$n =$		
$\phi(n) =$		
$e =$		
$d =$		
public key =		
secret key =		
encrypt $M = 5$		

Problem 2: Solve the recurrence equation $A_n = A_{n-1} + 3A_{n-2}$, for $A_0 = 0$, $A_1 = 13$. Follow the steps below.

(a) Characteristic polynomial and its roots:

(b) General solution:

(c) Equations for initial conditions and its solution:

(d) Final answer: