

1. (a) Determine if 89390560188927479475419479722057734729729482847955545813572735481709634713344461973274665592397783737597924101236890149790994375693349110163 is prime or composite. If its composite, 100 bonus points for factoring it
- (b) Determine if 28931173310200947387086562757623252338451835298544520149425700350069311973719173379018148911000604041118016508715311338915968670064254182011 is prime or composite. If its composite, 100 bonus points for factoring it
2. Suppose you recover the following message fragment: 1035240570042728673728196320930222107316594633114121136689408631603106119337002899697574589097478996099924930739869141872195106634794611169548906382652940692223 from Alice to you. Decipher it knowing it was enciphered with RSA and enciphering key $e = 1512981835473586284461379858930229658812019876473600752434366841003479026486392209009169281509323622308323437213903692504369544179406136237786502626366698124911$ and private keys: $p = 43731336053271610908992060470452089660557944622992613779934909233799210738243757$ and $q = 86229144132612894111726445355305365506781713290788111380355710666678613440685997$.
3. (a) Express the number 894 in binary.
- (b) What number has the hexadecimal expression $1d515c$.