

1. (a) Determine if 61724524815263338496906277568695592864183481920877879751413851265696745942489856423990820820014885435174609906259479902993768861766915817421 is prime or composite. If its composite, 100 bonus points for factoring it
- (b) Determine if 37868615009121912651577148689205098723068078753634383099438629257938862601282899533009071826725450139490134498512654582904991308201218242027 is prime or composite. If its composite, 100 bonus points for factoring it
2. Suppose you recover the following message fragment: 1031423168692219296952345974004168606533802647446536394030319246411386867314950835295487404512200873622386625059433649882127774961587706087437191733152266898621 from Alice to you. Decipher it knowing it was enciphered with RSA and enciphering key $e = 737269725289863597764267857475882658061217306960201878915943007116813093260021749485220581176118416234000966489975734281127849555377638896209471870911593496847$ and private keys: $p = 38863320051611259777524768654833851608791627252501811933811169613027923941159571$ and $q = 33873094076732679512604965238997749387269661204490176639295889512940011416566737$.
3. (a) Express the number 680 in binary.
- (b) What number has the hexadecimal expression $118a0f$.