Lacey Hartin **Homework 12** **Due 12-06-2013**

1. (a) Determine if 714404589173372506772256436645727130169909529407063297068042388377457360232586640393210900158597414569370017864414634645942797699949939493 949321 is prime or composite. If its composite, 100 bonus points for factoring it

   (b) Determine if 344677791201869908590343404335916551519921594316296236490228462004460244037036177940834744996168808660126176880194144232988814052984090804481 is prime or composite. If its composite, 100 bonus points for factoring it

2. Suppose you recover the following message fragment: 188907374357092424840202403737175346540997680429873432849824235290243389798510718279553112660301175567214225648288791551802591487357499610714432288713928109364 from Alice to you. Decipher it knowing it was enciphered with RSA and enciphering key $e = 162227800115668268362327466486168576292471562425879134521762979106731683634621097118167998224907603975647085217803575635840929465792718790122240034553417876283 7$ and private keys: $p = 7938247542866178262120261775306139310379995867943762929132155478781061257368568 9$ and $q = 3145125463298467227584065339412594048577687472182035752554165907791699289285674 1$.

3. (a) Express the number 874 in binary.

   (b) What number has the hexidecimal expression $1b0698$.