

1. (a) Determine if 64623292687519361974706859104046371087850034622291171314302295187773007131376618684394624409723940455236835203809442687386412261532044167711 is prime or composite. If its composite, 100 bonus points for factoring it
- (b) Determine if 4505438094888328467696554205689802661963510527137151646083265954705286791201691474196554956010885454507364759822881895016413757658433301399 is prime or composite. If its composite, 100 bonus points for factoring it
2. Suppose you recover the following message fragment: 182862966626332465777595994997347221257899685571506777432761597551180804015362801932124025111266592088146974627713614402319664804818431869959294046072774528175 from Alice to you. Decipher it knowing it was enciphered with RSA and enciphering key $e = 891019971575425696258704454114476616885071679856001735687728348279201885759412819628206995630608525001596951261679590823529580378633450488131709719970257568823$ and private keys: $p = 58849234291703949032978199238590954379157314710684300170623157998819286027534209$ and $q = 27702433029191005209999004811493236211621579993112358135412229028354333469698039$.
3. (a) Express the number 963 in binary.
- (b) What number has the hexadecimal expression 186554.