

**CIS 3362 Homework #5b**  
**Due: 11/5/2014 at the beginning of class**

- 1) Using the technique shown in class dealing with the sum and product of the roots, find a quadratic function which has roots that are double the roots of the quadratic function  $f(x) = x^2 - 4x - 7$ .
- 2) Using the technique shown in class dealing with the sum and product of the roots, find a quadratic function which has roots that are each two more than the roots of the quadratic function  $f(x) = x^2 - 4x - 7$ .
- 3) Given the elliptic curve  $E_{23}(1, 1)$ , and the points  $P = (11, 3)$ ,  $Q = (13, 16)$ , determine  $P + Q$ .
- 4) Given the elliptic curve  $E_{23}(1, 1)$ , and the point  $P = (3, 13)$ , determine  $2P$ .
- 5) Given the elliptic curve  $E_{29}(10, 4)$ , and the points  $P = (19, 21)$ ,  $Q = (8, 4)$ , determine  $P + Q$ .
- 6) Given the elliptic curve  $E_{29}(10, 4)$ , and the point  $P = (26, 11)$ , determine  $2P$ .