Using Maplets to Construct Finite Fields Exercises

1. For each of the following polynomials , all of whom are primitive in , construct the field elements that correspond to powers of a in .

a. 

b. 

c. 

d. 

2. For each of the following polynomials, both of whom are primitive in , construct the field elements that correspond to powers of a in .

a. 

b. 

3. Find a primitive polynomial of degree 4 in , and use this polynomial to construct the non-zero elements in a finite field.

4. Find a primitive polynomial of degree 2 in and use this polynomial to construct the non-zero elements in a finite field.

5. Use a primitive polynomial to construct the nonzero elements in a finite field of order 127.