

October 31 – Math 331

1. For the following rings find all elements of the ring and find the multiplication table.

(a)

$$F_1 = \frac{\mathbb{Z}_3[x]}{(x^2 + 2x + 2)}$$

(b)

$$F_2 = \frac{\mathbb{Z}_3[x]}{(x^2 + x + 1)}$$

2. Let $f(y) = y^2 + 2y + 2 \in F_1[y]$. Factor f .