

If integer $n > 0$: t^2_m , $t, m \in \mathbb{Z}$,

Then $t_m X + 1 \in U(\mathbb{Z}_n[X])$

Let $f = t_m X + 1$, $g = (n-m)tX + 1$

$$f \cdot g = n-m t^2_m X + (n-m)tX + t_m X + 1$$

$$= 0 + n t X + 1$$

$$= 1.$$

$$\text{So } g = f^{-1}$$

□