Chapter 4.4
Friday, Week 3

Warmup

How many solutions?

1. $5n \equiv 1 \pmod{24}$
2. $5n \equiv 3 \pmod{24}$
3. $9n \equiv 1 \pmod{24}$
4. $9n \equiv 3 \pmod{24}$
5. $n^2 \equiv 1 \pmod{19}$
6. $n^2 \equiv 2 \pmod{5}$
7. $n^2 \equiv 1 \pmod{8}$

How many solutions?

1. $x \equiv 2 \pmod{5}$ and $x \equiv 9 \pmod{10}$
2. $x \equiv 2 \pmod{5}$ and $x \equiv 9 \pmod{11}$

Recall: What is a bijection?

If $f(x) = 5x$, draw a diagram illustrating $f : \mathbb{Z}_7 \to \mathbb{Z}_7$

Look at the numbers in $\mathbb{Z}_{11}$ and partner every number with its multiplicative inverse. Which numbers have no partners? Which numbers have multiple partners?