Prove proposition 4.

 Proposition 4

 If $m\geq 2$ is a fixed integer and $a,b,c\in Z$ then:

 (1) $a≡a mod m$

 (2) If $a≡b mod m$ then $b≡a mod m$

 (3) If $a≡b mod m$ and $b≡c mod m$, then $a≡c mod m$