Wilson's Theorem

$1 \cdot 2 \cdots \frac{(p-1)}{a} = -1 \mod p$

**Proof (pf):**

$a^p - a = \prod_{k=0}^{p-1} (x + k) = \prod_{k=0}^{p-1} (x + k)$

$x^p - x = \prod_{k=1}^{p-1} (x + k) = x^{p-1} - 1$