Name: _____

(Supp-8) Let a and n be integers with $n \geq 2$. Let $d = \gcd(a, n)$. Show that for any integer b, the equation $ax \equiv b \pmod{n}$ has a solution if and only if $d|b$.

Hint: You'll probably want to use Aryabhata's (Bézout's) identity here.