1. On Friday Adam picked a number (it was the first day), every day with odd number he divides it by 2, and every even day he add 10 to it. Write a recurrent formula for the number Adam has on nth day.
2. Let $X = \mathbb{Z} \times \mathbb{Z}$ and $R$ be a relation on $X$ such that

$$(x_1, y_1) R (x_2, y_2) \iff x_1 - y_2 \text{ and } x_2 - y_1 \text{ are odd.}$$

Is $R$ an equivalence relation on $X$?
3. Let $X = \mathbb{Z} \times \mathbb{Z}$ and $R$ be a relation on $X$ such that 

$$(x_1, y_1) R (x_2, y_2) \iff x_1 + y_1 \leq x_2 + y_2.$$ 

Is $R$ a partial order on $X$?