28. GIVE A RECURSIVE DEF OF EACH OF THESE SETS OF ORDERED PAIRS OF POSITIVE INTS

a) $S = \{(a,b) \mid a \in Z^+, b \in Z^+, \text{ and } a+b \text{ is odd}\}$

BASE CASE: $(1,2), (2,1) \in S$

RECURSIVE CASE EITHER A OR B IS ODD

If $(a,b) \in S$ then $(a+2, b) \in S$ and $(a, b+2) \in S$

$(1,2) + (3,2) = 5$; $(1,4) = 5$ ✓

32) a) GIVE A RECURSIVE DEF OF THE FUNCTION ones(s), which counts the NUMBER ONES IN A BIT STRING S

BASE CASE: $ones(\lambda) = 0$

RECURSIVE CASE: If $x \in \Sigma$ and $w \in \Sigma^*$

then $ones(wx) = ones(w) + x$ where $x = 1$ or 0.