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2 Generalize the Take-Away Game
a) remove any number from 1 to 6 chips at each turn, then like this table

$residue$	$WhichwinPorN$
0	P
1	N
2	N
4	N
5	N
6	N
7	P
8	N
9	N
10	N
11	N
12	N
13	N

Using the total number of the chips N, then N mod 7 =0 if the result is 0 then P-position can win, if not then N-position can win
b)if there are 31 chips in the pile. we can compute 31 mod 7=3, the first remove 3 chips. keeping the remaining chips M mod 7 =0

3 Find the set of P-positions for the subtraction games with subtraction sets
a) S=1,3,5,7
Set initial chips is N, if N mod 2 =0 then P-position win.
if N mod 2 $\neq$0 then N-position win
b) S=1,3,6
Set initial chips is N, if N mod 9 =0 then P-position win.
if N mod 9 $\neq$0 then N-position win
c)S=1,2,4,8,16,. . .=all powers of 2
Set initial chips is N, if N mod 3 =0 then P-position win.
if N mod 3 $\neq$0 then N-position win
d)if play starts at 100 chips
(a) 100 mod 2 = 0 first-player
(b) 100 mod 9 = 1 second-player
(c) 100 mod 3 = 1 second-player